4317

SLV-595HF/696HF
RMT-V102D/V112A

SERVICE MANUAL

US Model
Canadian Model

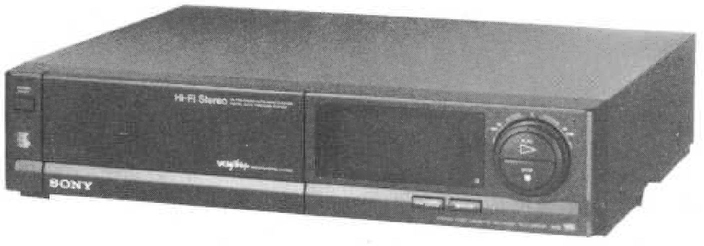

Photo : SLV-595HF

- Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT Ⅱ for MECHANICAL ADJUSTMENTS. (9-972-816-11)

VHS Hi-Fi

SPECIFICATIONS

System

Format	VHS NTSC standard
Video Recording System	Rotary two-head helical scanning FM system.
Video Signal	
Tape Speed	SP: 33.35 mm/s (1 3/8 inches/s) EP: 11.11 mm/s (7/16 inches/s) LP: 16.67 mm/s (11/16 inches/s) Playback only
Maximum recording/ playback time	9 h in EP mode (with T-180 tape)
Fast-forward and rewind time	Approx. 4 min. 30 s (with T-120 tape)
High-speed rewind time	Approx. 3 min. (with T-120 tape)

Tuner Section

Channel Coverage	VHF channels 2 to 13 UHF channels 14 to 69 CATV channel A-8 to A-1, A to W, W+1 to W+84
Antenna	75-ohm antenna terminal for VHF/UHF

Inputs and Outputs

LINE IN 1 and 2	VIDEO IN (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (2 each) Input level: –7.5 dBs (0 dBs = 0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT	VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2) Standard output: –7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms
CONTROL S IN	Mini jack (1)

Timer Section

Clock	Quartz locked
Time Indication	12-hour cycle
Timer Setting	Only for recording 8 program in one month at max.
Power back-up	Built-in self-charging capacitor Back-up duration: Up to three hours at one time

General

Power requirements	120 V AC, 60 Hz
Power consumption	25 W (max.) 6 W (in standby condition)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Dimensions	430 x 100 x 395 mm (w/h/d) (17 x 4 x 15 3/4 inches)
Weight	6.0 kg (15 lb.)

–Continued on next page–

MICROFILM

VIDEO CASSETTE RECORDER

SONY®

Wireless Commander RMT-V102D (for SLV-595HF)/ V112A (for SLV-696HF)

Remote control system	Infrared control
Command mode	VTR 1/2/3 switchable
Power requirements	3 V DC, 2 size AA batteries (IEC designation R6)

Accessories Supplied

Wireless Commander RMT-V102D (for SLV-595HF)/V112A (for SLV-696HF)	(1)
Size AA (R6) batteries	(2)
75-ohm coaxial cable with F-type connectors	(1)
External antenna connector	(1)
AC power cord	(1)
Audio/video connecting cable (3 phono to 3 phono)	(1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SERVICE NOTE

1. RETURNING PINCH ROLLER, GUIDE ROLLER AND ELEVATOR CAM TO STOP CONDITION

1) Remove the bottom panel.
2) Turn the worm gear Ⓐ of the cam motor, located at lower of the MD, to the arrow direction Ⓑ by finger.

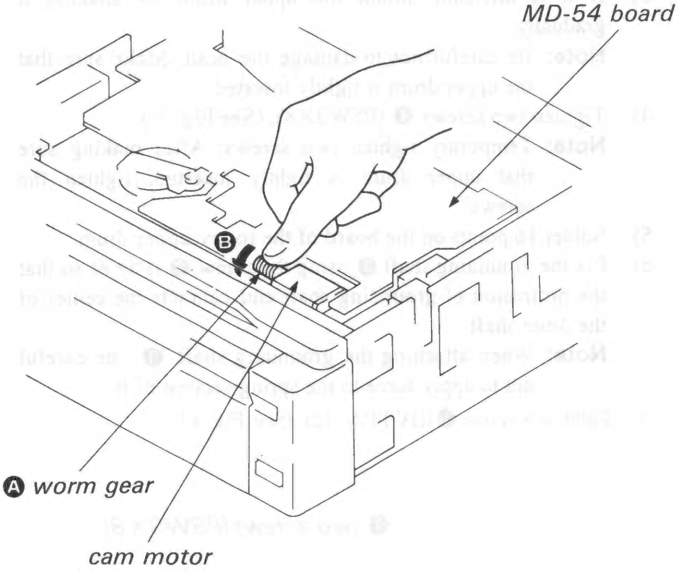

MD-54 board
Ⓑ
Ⓐ worm gear
cam motor

Fig. 1.

2. WINDING TAPE TO CASSETTE HALF

Turn the fly wheel Ⓐ of the capstan motor to the arrow direction Ⓑ by finger, then the cassette tape will be wound to the cassette half.

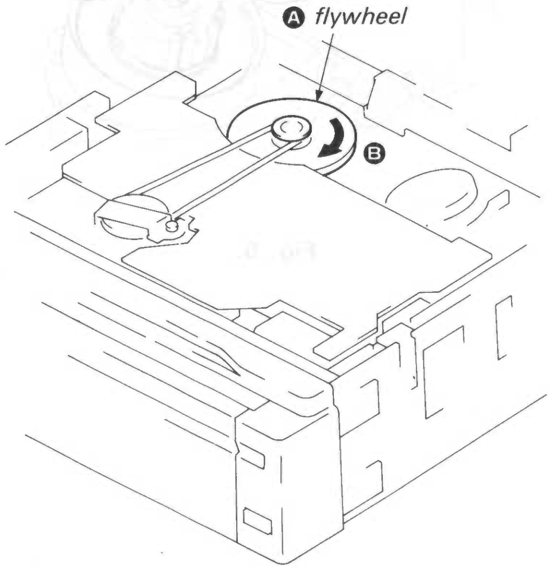


Fig. 2.

3. TAKING OUT CASSETTE WHEN UNIT IS DEFECTIVE WITH CASSETTE IN

1) Remove the upper case.
2) Turn the worm gear Ⓐ of the FL cassette compartment motor to the arrow direction Ⓑ by finger.

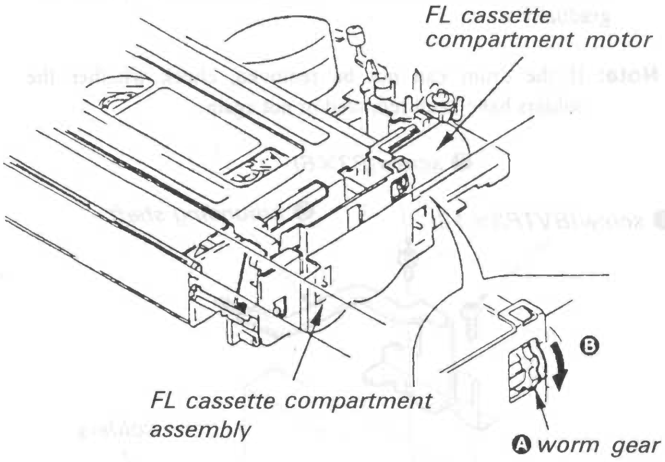

FL cassette compartment motor
Ⓑ
FL cassette compartment assembly
Ⓐ worm gear

Fig. 3.

Note: When performing 1. to 3., be careful not to clog and damage the cassette tape.

4. UPPER DRUM REPLACEMENT

4-1. Removal of Upper Drum

1) Remove the screw ❶ (BVTP3×12). (See Fig. 4.)
2) Remove the screw ❷ (P3×6) and take out the grounding shaft ❸. (See Fig. 4.)
3) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows (16points).
4) Remove two screws ❹ (PSW3×8) and take out the rotary upper drum in the arrow direction Ⓐ. (See Fig. 5.)
   If it is difficult, remove by shaking the rotary upper drum gradually.

Note: If the drum can not be removed, check whether the solders have been removed or not again.

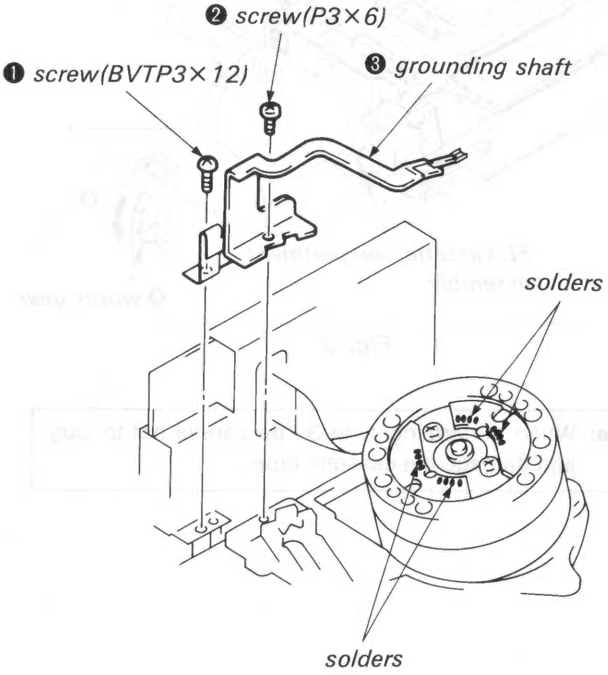

❷ screw(P3×6)
❶ screw(BVTP3×12)
❸ grounding shaft
solders
solders

Fig. 4.

4-2. Mounting Upper Drum

1) When inserting the rotary drum into the lower drum, be careful not to blur the contacting surface with fingerprint or the like.
2) Mount the rotaly upper drum by aligning red head side with marked S1 of rotary transformer board (lower drum) so that the screw holes of both upper and lower drums match. (See Fig.5.)
3) If it is difficult, mount the upper drum by shaking it gradually.
   Note: Be careful not to damage the head. Make sure that the upper drum is tightly inserted.
4) Tighten two screws ❹ (PSW3×8). (See Fig. 5.)
   Note: Temporary tighten two screws. After making sure that upper drum is tightly inserted, tighten the screws.
5) Solder 16 points on the board of the rotary upper drum.
6) Fix the grounding shaft ❸ using the screw ❷ (P3×6) so that the protrusion of grounding shaft end contacts the center of the drum shaft.
   Note: When attaching the grounding shaft ❸, be careful not to apply force to the spring section of it.
7) Tighten a screw ❶ (BVTP3×12). (See Fig. 4.)

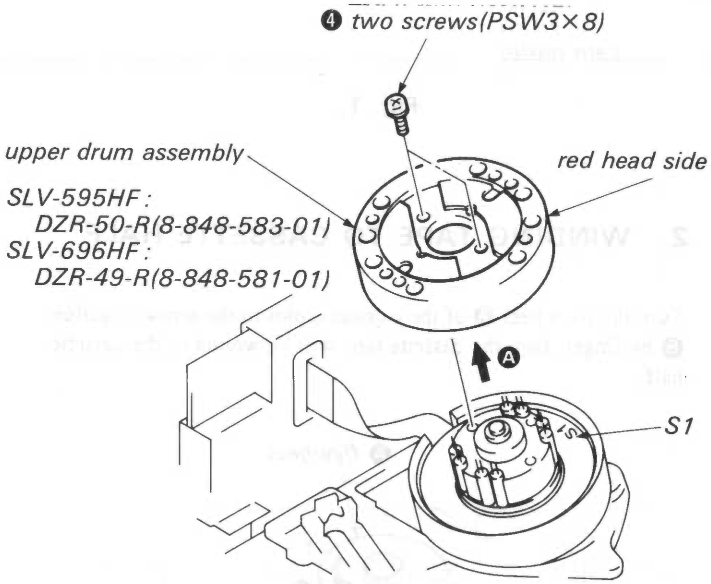

❹ two screws(PSW3×8)
upper drum assembly
SLV-595HF:
DZR-50-R(8-848-583-01)
SLV-696HF:
DZR-49-R(8-848-581-01)
red head side
Ⓐ
S1

Fig. 5.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Hookups and Getting Started

Before you can use your VCR for the first time, you need to connect it to your TV and set it up to receive programs for viewing and recording. This section explains how to hook up, set up, and operate your VCR so that you can start enjoying it right away. There are, however, many types of TVs available and many different ways in which your TV can be hooked up. As a result, this manual describes several ways your VCR can be connected.

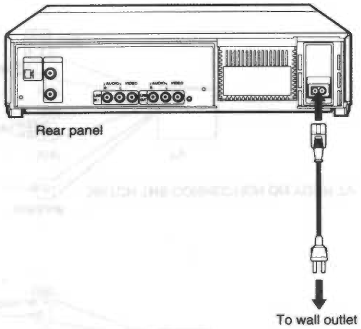
To hook up your VCR so that it works best for you, first scan through this section to find the diagram that best illustrates the way your TV is currently connected (antenna or cable/cable box). Then use the accompanying diagrams and procedures to complete your VCR's connections.

After you've completed the connections, follow the instructions for setup, including VCR Plus+ setup. (During setup, if you need more details of the procedures described, page numbers are provided where you can find complete, step-by-step instructions.)

After you've completed the setup, you're ready to use your VCR. Follow the instructions provided in "To Watch the TV", "To Watch the VCR", and "To Record A Program" for your specific hookup. (Again, if you need step-by-step instructions, page numbers are provided where you can find this information.)

Before making the connections, check the following points:

- Turn off the power to the VCR and TV.
- Do not connect the AC power cords until all of the connections are completed.



- Make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, consult your nearest Sony dealer or qualified technician.

Caution
Connections between the VCR VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

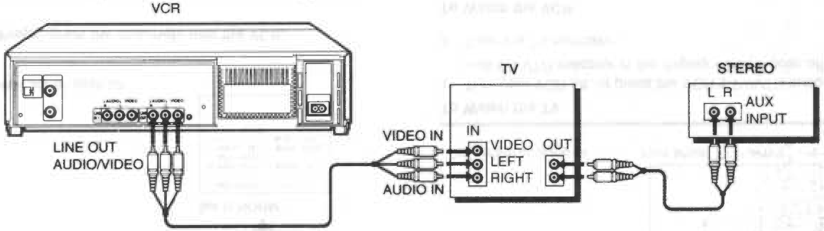
Hookup 1

Audio/Video (A/V) Hookup

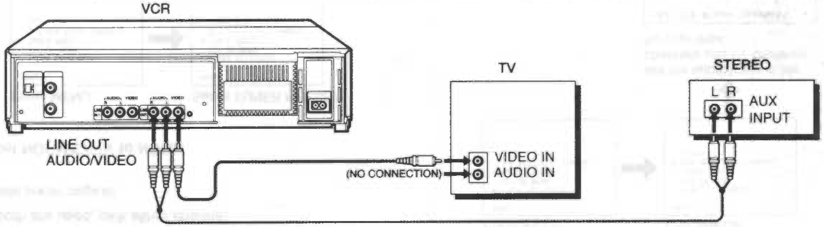
If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. In addition, for a true "home theater" experience, you should connect the audio outputs of your VCR or TV to your stereo system.
If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookup.

If you only wish to play back pictures and movies, you're finished after you've made these connections. If you want to record off-air or off your cable TV system, please do the A/V hookup on this page first, then proceed to the following pages for antenna or cable hookup.

1A Use hookup 1A if your TV is a stereo type.



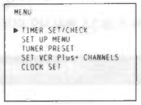
1B Use hookup 1B if your TV does not have stereo jacks.



After you've hooked up your TV using the A/V connections, use the following procedure to set up and use the VCR with your TV.

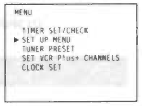
A/V Setup & Operation
Set AUTO ANT SEL to OFF.

Press MENU.



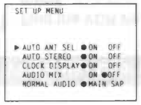
```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select SET UP MENU.



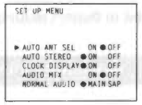
```
MENU

  TIMER SET/CHECK
▶ SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select AUTO ANT SEL.



```
SET UP MENU

▶ AUTO ANT SEL   ●ON   OFF
  AUTO STEREO    ●ON   OFF
  CLOCK DISPLAY●ON   OFF
  AUDIO MIX       ON  ●OFF
  NORMAL AUDIO   ●MAIN SAP
```

Set to OFF.



```
SET UP MENU

▶ AUTO ANT SEL    ON ●OFF
  AUTO STEREO    ●ON   OFF
  CLOCK DISPLAY●ON   OFF
  AUDIO MIX       ON ●OFF
  NORMAL AUDIO   ●MAIN SAP
```

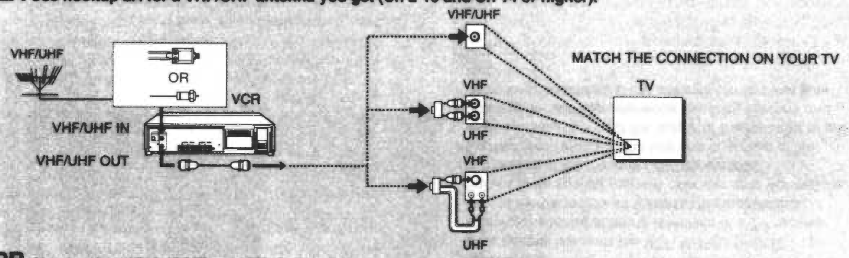
Details are on page 26.

Hookup 2

Antenna Hookup

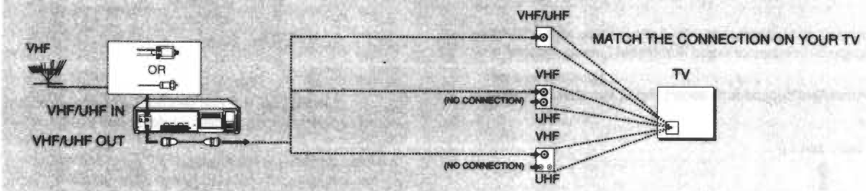
Make the following connections if you're using an antenna (not a cable TV).

2A Use hookup 2A for a VHF/UHF antenna you get (Ch 2-13 and Ch 14 or higher).



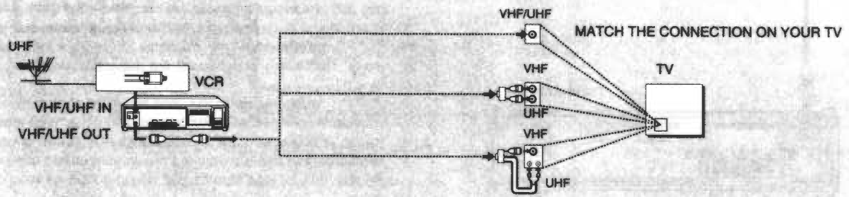
MATCH THE CONNECTION ON YOUR TV

2B Use hookup 2B for VHF only (Ch 2-13 only).



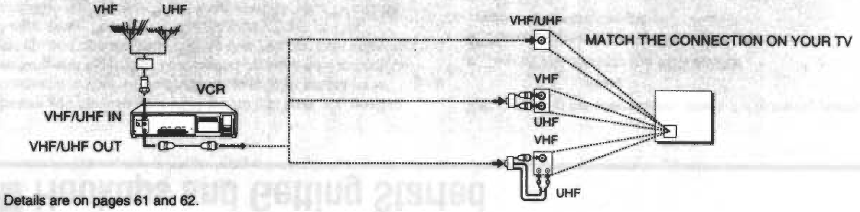
MATCH THE CONNECTION ON YOUR TV

2C Use hookup 2C for UHF only (Ch 14 or higher).



MATCH THE CONNECTION ON YOUR TV

2D Use hookup 2D if you're using separate VHF and UHF antennas.

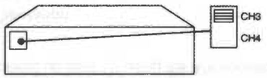


MATCH THE CONNECTION ON YOUR TV

Details are on pages 61 and 62.

VCR Setup (Antenna)

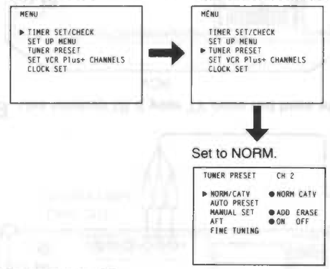
1 Set the RF Unit on the VCR's rear panel to CH 3 or CH 4.
If you made A/V connections, skip this adjustment.



Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 60.

2 Set NORM/CATV to NORM.



Press MENU.

```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select TUNER PRESET.

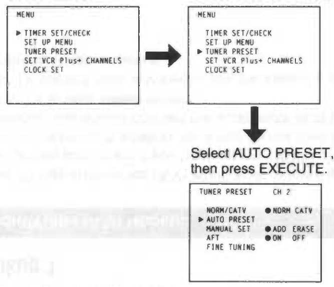
```
MENU

  TIMER SET/CHECK
  SET UP MENU
▶ TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Set to NORM.

```
TUNER PRESET      CH 2

▶ NORM/CATV     ●NORM  CATV
  AUTO PRESET
  MANUAL SET    ●ADD   ERASE
  AFT           ●ON    OFF
  FINE TUNING
```

Details are on page 22.

3 Preprogram the channels into the VCR.



Press MENU.

```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select TUNER PRESET.

```
MENU

  TIMER SET/CHECK
  SET UP MENU
▶ TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select AUTO PRESET, then press EXECUTE.

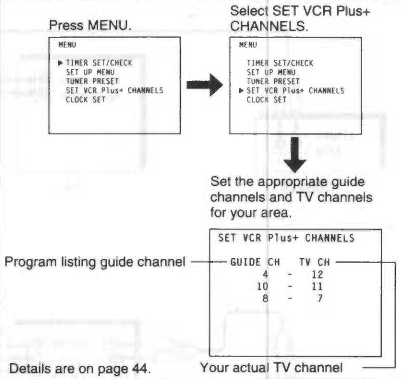
```
TUNER PRESET      CH 2

  NORM/CATV     ●NORM  CATV
▶ AUTO PRESET
  MANUAL SET    ●ADD   ERASE
  AFT           ●ON    OFF
  FINE TUNING
```

Details are on pages 22 and 23.

VCR Plus+ Channel Setup (Antenna)

1 Find the VCR Plus+ Channel Listing in your program guide.
For details on the VCR Plus+ Channel, see page 43.

2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:



Press MENU.

```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

Select SET VCR Plus+ CHANNELS.

```
MENU

  TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
▶ SET VCR Plus+ CHANNELS
  CLOCK SET
```

Set the appropriate guide channels and TV channels for your area.

```
SET VCR Plus+ CHANNELS

  GUIDE CH   TV CH
      4   -   12
     10   -   11
      8   -    7
```

Program listing guide channel

Your actual TV channel

Details are on page 44.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Tune the TV normally.

To Watch the VCR

1 Tune the TV to CH 3 or CH 4, whichever you set on the back of the VCR. (If you made the A/V connections on page 7, set your TV to the A/V input instead.)
2 Insert a cassette and press ▷ PLAY. If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator comes on in the VCR's display window.

Details are on page 28.

To Record A Program

1 Press VCR Plus+ on the Remote Commander.
2 Enter the program's PlusCode number.
3 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
4 Insert a blank cassette.
5 Press TIMER REC on the Remote Commander.

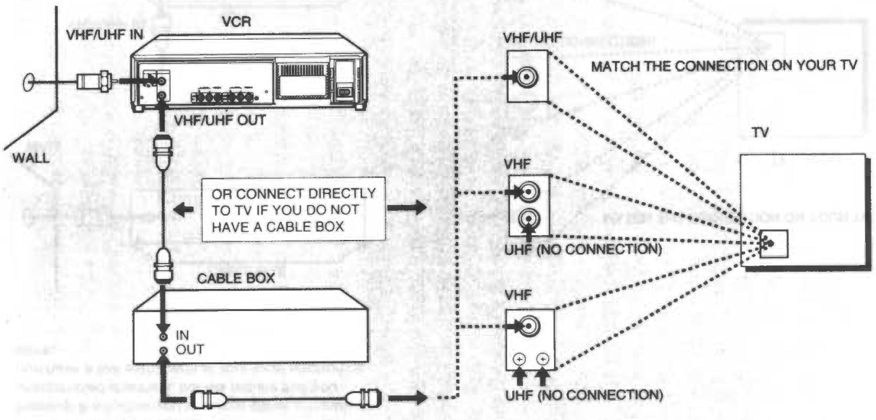
Details are on page 45.

Hookup 3

Simple Cable Hookup

Recommended Use:
Since this is the simplest hookup, and allows the most effective use of your VCR's VCR Plus+ timer recording feature, we recommend that you try this hookup first. If you cannot record the channels you want, you'll need to change your hookup to one of the choices on the following pages, or contact your cable company for assistance.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. You will not be able to record scrambled channels with this hookup.


VHF/UHF IN
VCR
WALL
VHF/UHF OUT
OR CONNECT DIRECTLY TO TV IF YOU DO NOT HAVE A CABLE BOX
CABLE BOX
IN
OUT
VHF/UHF
MATCH THE CONNECTION ON YOUR TV
TV
VHF
UHF (NO CONNECTION)
VHF
UHF (NO CONNECTION)

What You Can and Can't Do With This Hookup

What You Can Do
- Record any unscrambled channel directly, without using a cable box.

What You Can't Do
- Record scrambled channels that require a cable box.

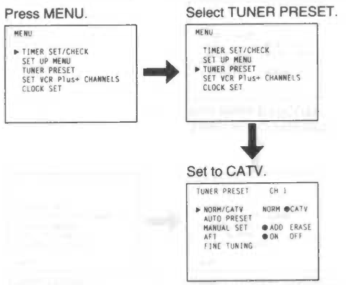
VCR Setup (Simple Cable)

1 Set the RF Unit on the VCR's rear panel to CH 3 or CH 4.
If you made A/V connections, skip this adjustment.

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 60.

2 Set NORM/CATV to CATV.


Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select TUNER PRESET.

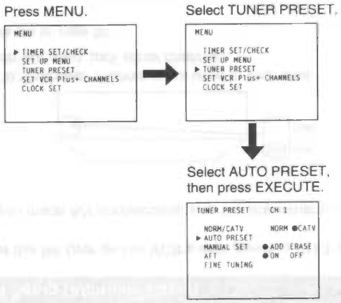
MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Set to CATV.

TUNER PRESET CH 1
▶ NORM/CATV NORM ●CATV
AUTO PRESET
MANUAL SET ●ADD ERASE
AFT ●ON OFF
FINE TUNING

Details are on page 22.

3 Preprogram the channels into the VCR.


Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select TUNER PRESET.

MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select AUTO PRESET, then press EXECUTE.

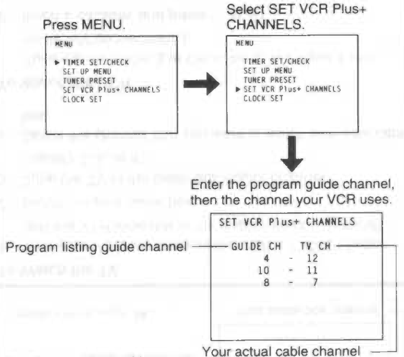
TUNER PRESET CH 1
NORM/CATV NORM ●CATV
▶ AUTO PRESET
MANUAL SET ●ADD ERASE
AFT ●ON OFF
FINE TUNING

Details are on pages 22 and 23.

VCR Plus+ Channel Setup (Simple Cable)

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 43.

2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:


Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select SET VCR Plus+ CHANNELS.

MENU
TIMER SET/CHECK
SET UP MENU
TUNER PRESET
▶ SET VCR Plus+ CHANNELS
CLOCK SET

Enter the program guide channel, then the channel your VCR uses.

SET VCR Plus+ CHANNELS
GUIDE CH TV CH
4 - 12
10 - 11
8 - 7
Program listing guide channel
Your actual cable channel

Details are on page 44.

To Watch TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.

2 Select the channel with your cable box (if you have one), or directly tune with your TV (if you don't).

To Watch the VCR

1a If you didn't use the A/V input:
- Turn ON the cable box.
- Select CH 3 or CH 4 on the **cable box** (whichever you set on the back of the VCR).
- Select the output channel of the cable box (usually 2,3 or 4) on your TV.

1b If you made the A/V connections on page 7: Set your TV to the A/V input.

2 Insert a cassette and press ▷ PLAY.

Details are on page 28.

To Record A Program

1 Press VCR Plus+ on the Remote Commander.

2 Enter the program's PlusCode number.

3 Press ONCE, DAILY, or WEEKLY on the Remote Commander.

4 Insert a blank cassette.

5 Press TIMER REC on the Remote Commander.

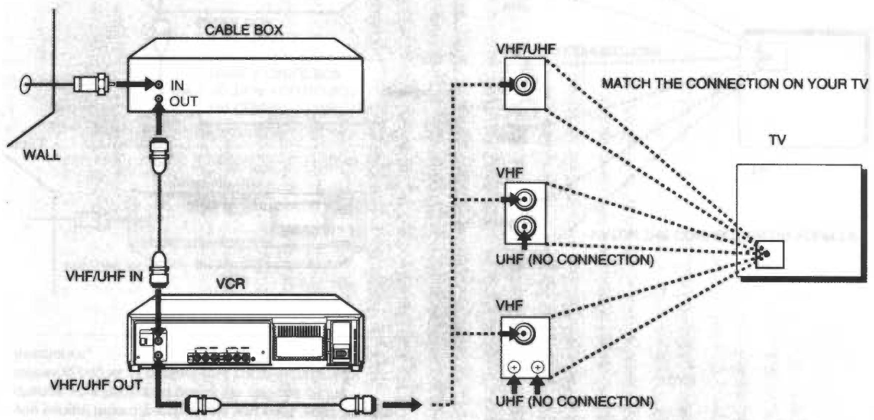
Details are on page 45.

Hookup 4

Alternate Cable Hookup

Recommended Use:
This hookup will allow you to record either scrambled or unscrambled channels, however, you will have to set the channel on the cable box for each program you want to record. If your cable system scrambles all or most channels, you **must** use this hookup. If your cable system only scrambles a few channels, you may prefer **Hookup 3** or **5** (on pages 10 and 14, respectively). Please note that **Hookup 3** will allow the easiest programming with VCR Plus+, but will not allow you to record scrambled channels.
Hookup 5 will allow you to record either scrambled or unscrambled channels, but will require that you purchase a few extra parts at your local electronics store.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. Although this hookup will also allow you to record these scrambled channels, you must use the cable box rather than the VCR to select channels.


CABLE BOX
IN
OUT
WALL
VHF/UHF IN
VCR
VHF/UHF OUT
VHF/UHF
MATCH THE CONNECTION ON YOUR TV
TV
VHF
UHF (NO CONNECTION)
VHF
UHF (NO CONNECTION)

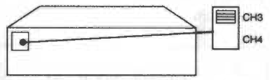
What You Can and Can't Do With This Hookup

What You Can Do
- Record any channel by selecting the channel on the cable box.

What You Can't Do
- Record with the cable box turned off.
- Record by selecting channels directly from the VCR.
- Record one channel while watching another channel.

VCR Setup (Alternate Cable)

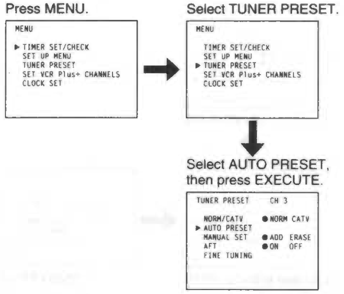
1 **Set the RF Unit on the VCR's rear panel to CH 3 or CH 4.**
If you made A/V connections, skip this adjustment.



Set to whichever channel is not used in your area. If both are used, pick either channel.
Details are on page 60.

2 **Switch on your cable box.**

3 **Preprogram the channels into the VCR.**


MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET
MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET
TUNER PRESET CH 3
NORM/CATV ● NORM CATV
▶ AUTO PRESET
MANUAL SET ● ADD ERASE
AFT ● ON OFF
FINE TUNING

Press MENU.

Select TUNER PRESET.

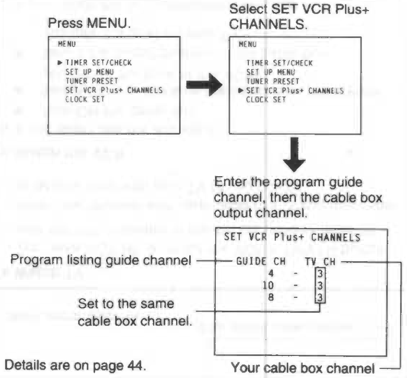
Select AUTO PRESET, then press EXECUTE.

Details are on pages 22 and 23.

VCR Plus+ Channel Setup (Alternate Cable)

1 **Find the VCR Plus+ Channel Listing in your program guide.** For details, see page 43.

2 **For all channels that you want to record, set each channel to the channel that your cable box uses for its output (usually 2, 3, or 4), as follows:**


MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET
MENU
TIMER SET/CHECK
SET UP MENU
TUNER PRESET
▶ SET VCR Plus+ CHANNELS
CLOCK SET
SET VCR Plus+ CHANNELS
GUIDE CH TV CH
4 - 3
10 - 3
8 - 3
Program listing guide channel
Set to the same cable box channel.
Your cable box channel

Press MENU.

Select SET VCR Plus+ CHANNELS.

Enter the program guide channel, then the cable box output channel.

Details are on page 44.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Switch on your cable box.
3 Tune the TV to the cable box output channel (usually 2, 3, or 4).
4 Select the channel that you want to watch with your cable box.

To Watch the VCR

1 Tune the TV to CH 3 or CH 4, (or to A/V input if you made A/V connections.)
2 Insert a cassette and press ▷ PLAY.

Details are on page 28.

To Record A Program

1 Switch on the cable box.
2 Select a channel you wish to record on the cable box.
3 Press VCR Plus+ on the Remote Commander.
4 Enter the program's PlusCode number.
5 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
6 Insert a blank cassette.
7 Press TIMER REC on the Remote Commander.
8 Leave the cable box ON.

Details are on page 45.

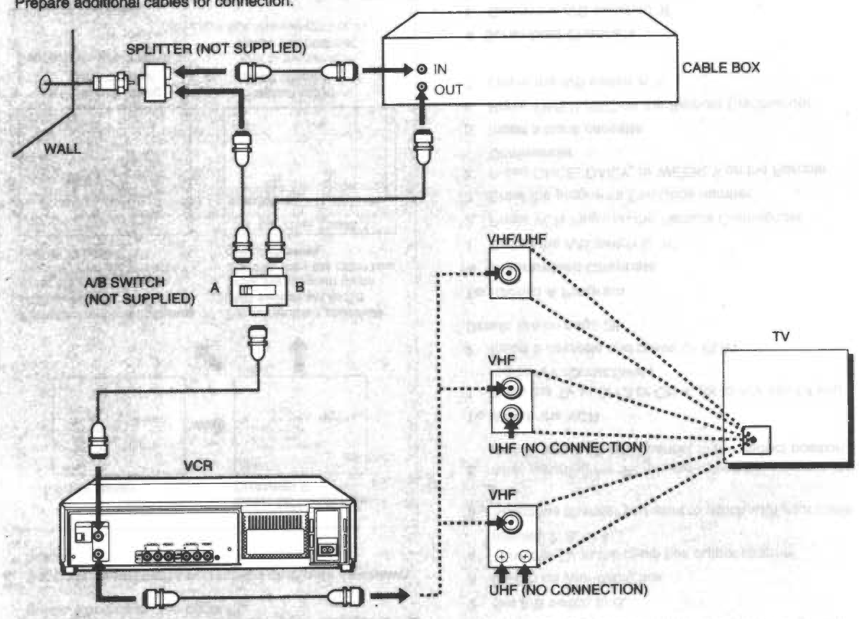
Hookup 5

Advanced Cable Hookup

Recommended Use:
By using the A/B switch, this hookup allows you to record most channels directly from the VCR (position "A"). You only use position "B" and the cable box if you want to record a "scrambled" channel. This gives you the most convenient operation of VCR Plus+ and the VCR's timer.

Background
This VCR can record virtually any unscrambled cable channel. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. This hookup will allow you to record unscrambled channels by selecting "A" on the A/B switch, and tuning the channel directly on your VCR. To record "scrambled" channels, select "B" on the A/B switch, and select the channel using the cable box. If your cable system scrambles all, or most channels, you must use the alternate cable hookup **(Hookup 4)** on page 12.

- **Only one cable is supplied with your VCR. Prepare additional cables for connection.**


SPLITTER (NOT SUPPLIED)
WALL
IN
OUT
CABLE BOX
A/B SWITCH
(NOT SUPPLIED)
A
B
VCR
VHF/UHF
VHF
UHF (NO CONNECTION)
VHF
UHF (NO CONNECTION)
TV

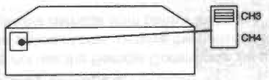
What You Can and Can't Do With This Hookup

What You Can Do
- Record unscrambled channels directly with the A/B switch in the 'A' position.
- Record scrambled channels through the cable box with the A/B switch in the 'B' position.

What You Can't Do
- Record scrambled channels directly without the cable box.
- Watch a different channel while you are recording a scrambled channel.
- Record scrambled channels through the cable box with the A/B switch in the 'A' position.

VCR Setup (Advanced Cable)

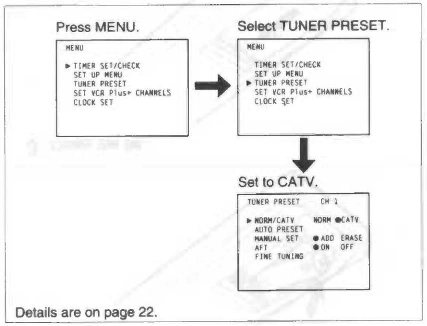
1 **Set the RF Unit on the VCR's rear panel to CH 3 or CH 4.**



Set to whichever channel is not used in your area. If both are used, pick either channel.
Details are on page 60.

2 **Set the A/B switch to 'A'.**

3 **Set NORM/CATV to CATV.**



Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select TUNER PRESET.

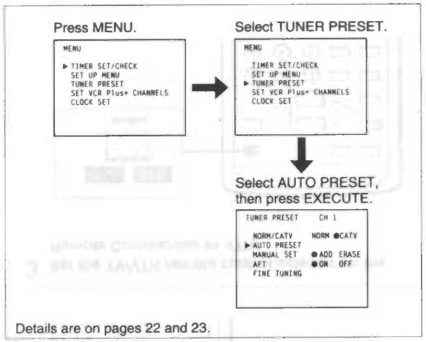
MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Set to CATV.

TUNER PRESET CH 1
▶ NORM/CATV NORM ●CATV
AUTO PRESET
MANUAL SET ●ADD ERASE
AFT ●ON OFF
FINE TUNING

Details are on page 22.

4 **Preprogram the channels into the VCR.**



Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select TUNER PRESET.

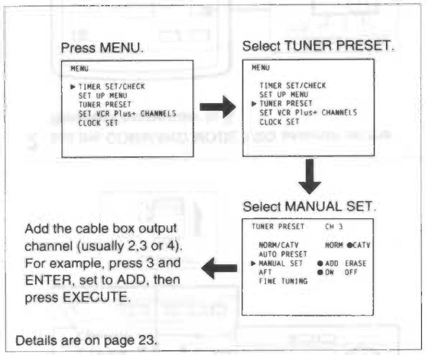
MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select AUTO PRESET, then press EXECUTE.

TUNER PRESET CH 1
NORM/CATV NORM ●CATV
▶ AUTO PRESET
MANUAL SET ●ADD ERASE
AFT ●ON OFF
FINE TUNING

Details are on pages 22 and 23.

5 **Add the cable box output channel (usually 2, 3, or 4).**



Press MENU.

MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select TUNER PRESET.

MENU
TIMER SET/CHECK
SET UP MENU
▶ TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select MANUAL SET.

TUNER PRESET CH 3
NORM/CATV NORM ●CATV
AUTO PRESET
▶ MANUAL SET ●ADD ERASE
AFT ●ON OFF
FINE TUNING

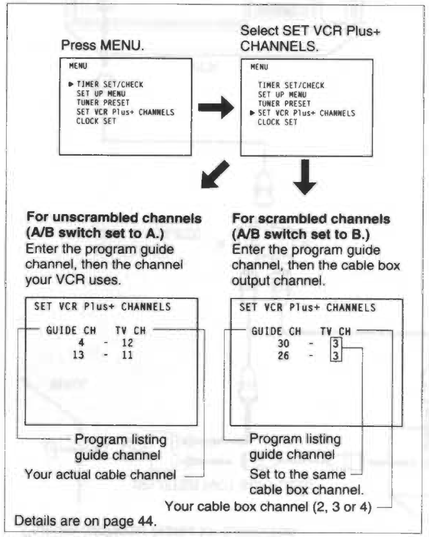
Add the cable box output channel (usually 2,3 or 4). For example, press 3 and ENTER, set to ADD, then press EXECUTE.

Details are on page 23.

VCR Plus+ Channel Setup (Advanced Cable)

1 **Find the VCR Plus+ Channel Listing in your program guide.** For details, see page 43.

2 **Set unscrambled and scrambled channels as shown below.**



Press MENU.

MENU
▸ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

Select SET VCR Plus+ CHANNELS.

MENU
TIMER SET/CHECK
SET UP MENU
TUNER PRESET
▸ SET VCR Plus+ CHANNELS
CLOCK SET

For unscrambled channels (A/B switch set to A.)
Enter the program guide channel, then the channel your VCR uses.

SET VCR Plus+ CHANNELS
GUIDE CH TV CH
4 - 12
13 - 11

Program listing guide channel

Your actual cable channel

For scrambled channels (A/B switch set to B.)
Enter the program guide channel, then the cable box output channel.

SET VCR Plus+ CHANNELS
GUIDE CH TV CH
30 - 3
26 - 3

Program listing guide channel

Set to the same cable box channel.

Your cable box channel (2, 3 or 4)

Details are on page 44.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Set A/B switch to B.
3 Switch on your cable box.
4 Tune the TV to the cable box output channel (usually 2, 3, or 4).
5 Select the channel you want to watch with your cable box.
6 After watching the TV, please remember to return the A/B switch and cable box channel to the correct position.

To Watch the VCR

1 Tune the TV to CH 3 or CH 4, (or to A/V input if you made A/V connections.)
2 Insert a cassette and press ▷ PLAY.

Details are on page 28.

To Record A Program

- **Unscrambled Channels**

1 Switch the A/B switch to 'A'.
2 Press VCR Plus+ on the Remote Commander.
3 Enter the program's PlusCode number.
4 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
5 Insert a blank cassette.
6 Press TIMER REC on the Remote Commander.
7 Leave the A/B switch in 'A'.

- **Scrambled Channels**

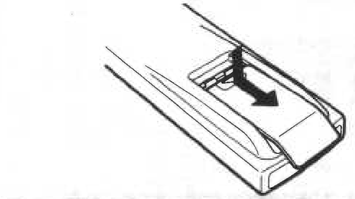
1 Switch the A/B switch to 'B'.
2 Switch on the cable box.
3 Select the channel you want to record on the cable box.
4 Enter the program's PlusCode number.
5 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
6 Insert a blank cassette.
7 Press TIMER REC on the Remote Commander.
8 Leave the A/B switch in 'B'.

Details are on page 45.

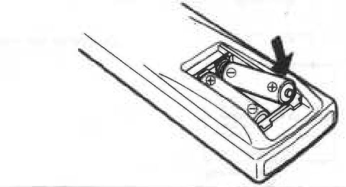
Preparing the Remote Commander

Inserting Batteries

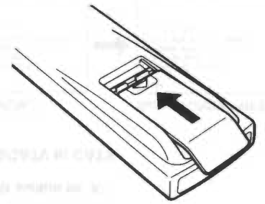
1 **Open the lid.**



2 **Insert two size AA (IEC designation R6) batteries with the polarity lined up correctly.**



3 **Close the lid.**

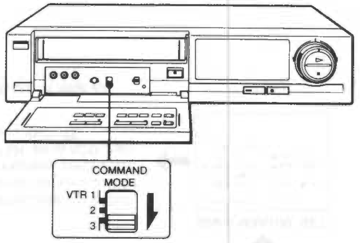


Notes on the handling of batteries
- With normal use, the batteries should last for approximately six months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

Setting the Command Mode

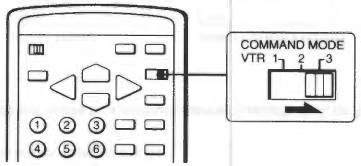
You can select three different positions for the Command Mode setting.

1 **Set the COMMAND MODE VTR 1/2/3 selector on the VCR to VTR 3.**



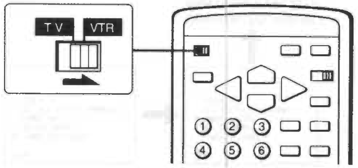
COMMAND MODE
VTR 1
2
3

2 **Set the COMMAND MODE 1/2/3 selector on the Remote Commander to 3.**



COMMAND MODE
VTR 1
2
3
①
②
③
④
⑤
⑥

3 **Set the TV/VTR remote control selector on the Remote Commander to VTR.**



TV
VTR
①
②
③
④
⑤
⑥

Controlling Other Sony Video Equipment If Other Sony Video Equipment Has a COMMAND MODE Selector:

1 **Set the Remote Commander COMMAND MODE 1/2/3 selector to a position other than the one you selected for this VCR.**

2 **Set the COMMAND MODE selector of any other video equipment to the same position you selected in step 1.**

If other Sony video equipment does not have a COMMAND MODE selector, you can control other Sony video equipment using the following COMMAND MODE settings:

Infrared remote controlled Sony Betamax VCR's: position 1
(Some of them may not be controlled in this mode.)

Sony 8 mm format VCRs: position 2

Sony VHS format VCRs: position 3

Manufacturers and their Code Numbers (SLV-696HF only)

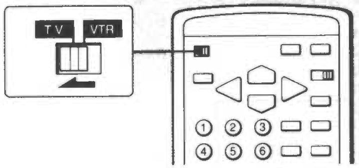
Your Remote Commander is preprogrammed for use with a number of different TV sets. If your TV is listed in the table below, set the appropriate manufacturer's code prior to using the Remote Commander.

Manufacturer	Code Number
SONY	1
Akai	4
AOC	4
Centurion	12
Coronado	3
Curtis-Mathes	12
Daytron	12
Fisher	11
General Electric	6, 10
Hitachi	2, 3
J.C.Penney	4, 12
JVC	9
KMC	3
Marantz	4, 13
MGA/Mitsubishi	4, 12,13
NEC	4, 12
Panasonic	6
Philco	3, 4
Philips	8
Pioneer	15
Portland	3
Quasar	6
Radio Shack	5
RCA	4, 10
Sampo	12
Sanyo	11
Scott	12
Sylvania	8, 12
Teknika	3, 8
Toshiba	7
Wards	3, 4, 12
Yorx	12
Zenith	14

Setting the Manufacturer's Code Number

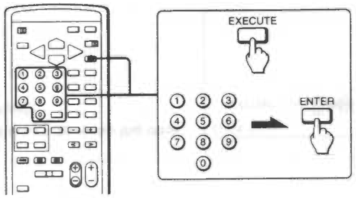
The following steps show you how to use your Remote Commander to set the appropriate manufacturer's code number for a non-Sony TV.

1 **Set the TV/VTR remote control selector to TV.**



2 **While pressing the EXECUTE button, press the manufacturer's code number and the ENTER button.**

You can now use the POWER, VOL +/–, CHANNEL +/– and the TV/VTR buttons on your Remote Commander to operate the TV.



NOTES:
- The TV/VTR button may not function, depending on the manufacturer. If this problem occurs, use your TV's remote control unit.
- If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.
- If you enter a new code number, the code number previously entered will be erased.
- If you release the EXECUTE button before pressing the ENTER button, the setting will be cancelled.
- Some manufacturers may use a different remote control system from the one programmed to work with your VCR. If this is the case, and you are unable to operate the TV with your Remote Commander, use the TV's remote control unit instead.
- When you replace the batteries in the Remote Commander, the code number automatically resets to 1 (SONY). Reset the appropriate code number, if necessary.

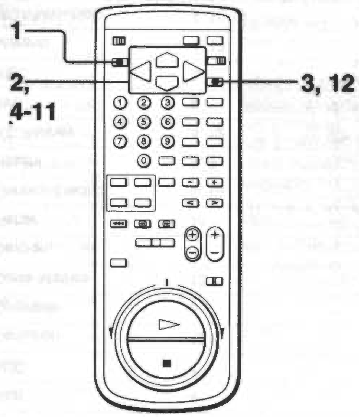
Setting the Time and Date

You can set the VCR time and date on the TV screen using the Remote Commander.

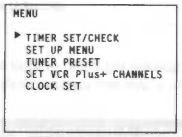
Example of Time and Date Setting

Example: To set to 3:32 pm, July 4, 1992

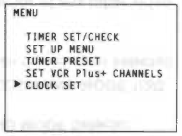
Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select the items.



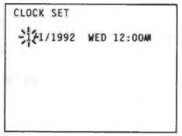
1 **Press MENU.**
The main MENU appears.


MENU
▶ TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CLOCK SET

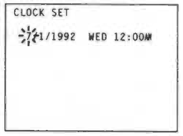
2 **Press ▲ or ▼ to move the cursor (▶) to CLOCK SET.**


MENU
TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
▶ CLOCK SET

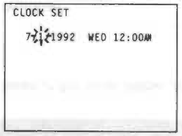
3 **Press EXECUTE.**
"1/1 1992 WED 12:00 AM" is displayed. The leftmost 1, in the "month" position, flashes.


CLOCK SET
1/1/1992 WED 12:00AM

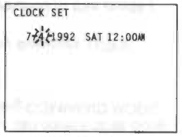
4 **Press ▲ or ▼ until 7 appears in the month position.**


CLOCK SET
7/1/1992 WED 12:00AM

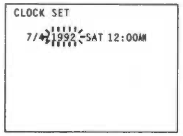
5 **Press ▶ to make the next number in the "day" position flash.**


CLOCK SET
7/1/1992 WED 12:00AM

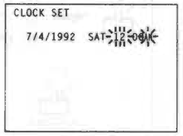
6 **Press ▲ or ▼ until 4 appears in the day position.**
The day of the week is set automatically.


CLOCK SET
7/4/1992 SAT 12:00AM

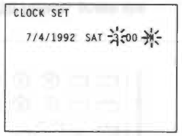
7 **Press ▶ to make the year flash and press ▲ to change the year.**


CLOCK SET
7/4/1992 SAT 12:00AM

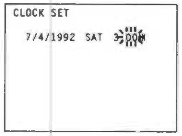
8 **Press ▶ to make the time flash.**


CLOCK SET
7/4/1992 SAT 12:00AM

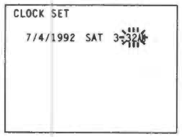
9 **Press ▲ or ▼ until 3 PM appears.**


CLOCK SET
7/4/1992 SAT 3:00 PM

10 **Press ▶ to make the minute flash.**


CLOCK SET
7/4/1992 SAT 3:00PM

11 **Press ▲ or ▼ until 32 appears in the minute position.**


CLOCK SET
7/4/1992 SAT 3:32PM

12 **Press EXECUTE at the same time that you hear the time signal.**
Pressing EXECUTE will set the clock to 3:32 pm 00 seconds.

NOTES:
- Do not set the time and date during timer-activated recording, timer recording standby or quick-timer recording.
- When the time and date clock is displayed the clock keeps running as long as no changes are made. The seconds are not reset to 00 when you return to the original screen.

Presetting the Active Channels

This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69 and CATV channels 1 to 125. These channels can be preset using the Remote Commander and the TUNER PRESET display. First, we recommend that you preset the active channels in your area using the automatic preset mode. Then, if there are any unwanted channels, disable them manually. If you have already decided which channels you wish to preset on the VCR, set them directly using the channel number buttons.

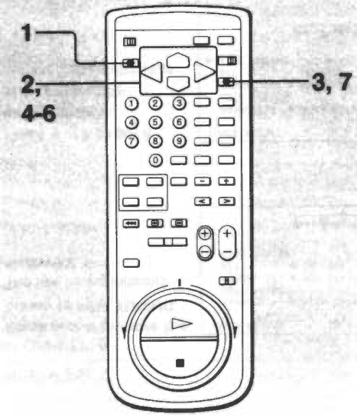
Before presetting channels, check the following points:

- Turn ON the VCR and the TV.
- If you have connected the TV and the VCR using the VHF/UHF OUT on the VCR only, make sure that the TV is set to the correct channel (CH 3 or CH 4) for the VCR.
- Press TV/VTR to display the VTR indicator in the display window on the VCR.
- Press INPUT SELECT so that the TUNER indicator and channel number appear in the display window on the VCR.

Presetting All Receivable Channels Automatically

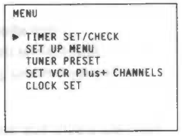
Use ▲ and ▼ to move the cursor.

Use ◀ and ▶ to select the items.



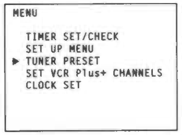
1 **Press MENU.**

The main MENU appears.



```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

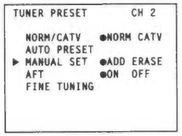
2 **Press ▲ or ▼ to move the cursor (▶) to TUNER PRESET.**



```
MENU

  TIMER SET/CHECK
  SET UP MENU
▶ TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

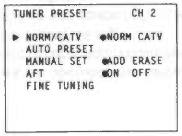
3 **Press EXECUTE.**

The TUNER PRESET menu is displayed.



```
TUNER PRESET        CH 2

  NORM/CATV    ●NORM CATV
  AUTO PRESET
▶ MANUAL SET   ●ADD ERASE
  AFT          ●ON  OFF
  FINE TUNING
```

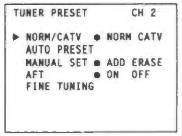
4 **Press ▲ or ▼ to move the cursor to NORM/CATV.**



```
TUNER PRESET        CH 2

▶ NORM/CATV    ●NORM CATV
  AUTO PRESET
  MANUAL SET   ●ADD ERASE
  AFT          ●ON  OFF
  FINE TUNING
```

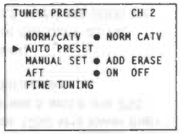
5 **Press ◀ or ▶ to select NORM or CATV.**

NORM presets the VHF and UHF channels; CATV presets your cable TV channels. The lowest channel number, 2 for NORM and 1 for CATV, will appear on the screen.



```
TUNER PRESET        CH 2

▶ NORM/CATV   ● NORM CATV
  AUTO PRESET
  MANUAL SET ● ADD ERASE
  AFT         ● ON  OFF
  FINE TUNING
```

6 **Press ▲ or ▼ to move the cursor to AUTO PRESET.**



```
TUNER PRESET        CH 2

  NORM/CATV   ● NORM CATV
▶ AUTO PRESET
  MANUAL SET ● ADD ERASE
  AFT         ● ON  OFF
  FINE TUNING
```

7 **Press EXECUTE.**

Receivable channels are preset in numerical sequence. When no more channels can be found, the presetting stops and the picture of the lowest numbered channel is displayed on the tape counter. "please wait" is flashing while presetting on the TV screen.

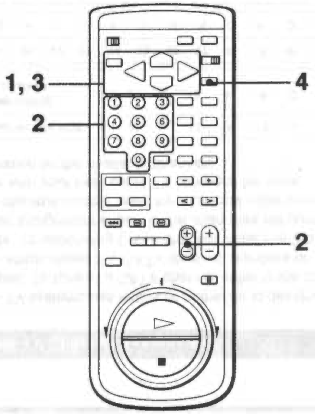
NOTE:
The VCR automatically exits from the TUNER PRESET menu if you don't proceed for more than one minute.

Presetting Desired Channels or Disabling Unwanted Channels

After automatic presetting, you can disable and/or add channels.

Use ▲ and ▼ to move the cursor.

Use ◀ and ▶ to select the items.



1 **Follow steps 1 to 3 in "Presetting All Receivable Channels Automatically" on page 22.**

2 **To disable channels, press CH +/– to select the channel.**
To add channels, press channel number buttons (0 to 9) and ENTER key to select the channel.

3 **To disable channels, press ◀ or ▶ to select ERASE.**
To add channels, press ◀ or ▶ to select ADD.

4 **Press EXECUTE.**

When you press CH +/–, the disabled channels are removed and the added channels are displayed.

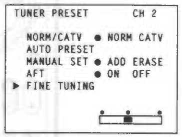
Fine-tuning

Normally, the Auto Fine Tuning (AFT) setting on the menu is set to ON, and the AFT function fine-tunes the picture. If the picture of a channel is not acceptable, fine-tune it manually.

1 Display the TUNER PRESET menu referring to steps 1 to 3 in "Presetting All Receivable Channels Automatically" (page 22).

2 Press ▲ or ▼ to move the cursor to FINE TUNING.

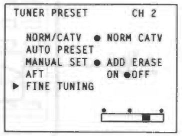
The fine tuning indicator is displayed.



```
TUNER PRESET        CH 2

   NORM/CATV   ● NORM CATV
   AUTO PRESET
   MANUAL SET  ● ADD ERASE
   AFT         ● ON  OFF
 ▶ FINE TUNING
```

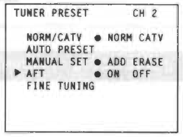
3 Press ◀ or ▶ to get a clearer picture.

The AFT ON/OFF automatically switches to OFF.



```
TUNER PRESET        CH 2

   NORM/CATV   ● NORM CATV
   AUTO PRESET
   MANUAL SET  ● ADD ERASE
   AFT           ON ●OFF
 ▶ FINE TUNING
```

4 Press ▲ to move the cursor to AFT and select ON if you cannot get a better picture. Then, press EXECUTE.



```
TUNER PRESET        CH 2

   NORM/CATV   ● NORM CATV
   AUTO PRESET
   MANUAL SET  ● ADD ERASE
 ▶ AFT         ● ON  OFF
   FINE TUNING
```

The FINE TUNING indicator

The FINE TUNING indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the center position or one space right or left of the center position. However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

Cable TV Channel Assignment

Cable TV systems use letters or numerals to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel, numbers on this VCR and the corresponding CATV channel. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

Number on this VCR	1	2	...	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E

19	20	21	22	23	24	25	26	27	28	29	30	31	32
F	G	H	I	J	K	L	M	N	O	P	Q	R	S

33	34	35	36	37	...	94	95	96	97	98	99
T	U	V	W	W+1	...	W+58	A-5	A-4	A-3	A-2	A-1

100	...	125
W+59	...	W+84

This VCR is designed to correspond to the standard cable system. However, the cable TV services may vary from area to area. Your local cable TV company may adopt either the HRC[1] or IRC[2] cable system. This VCR is capable of receiving either of these cable systems in the best condition.

1) **HRC (Harmonic Related Carriers)**
   All channels except for 5 and 6 are 1250 kHz lower than the standard cable system. Channels 5 and 6 are 750 kHz higher than the standard cable system.

2) **IRC (Incremental Related Carriers)**
   All channels except for 5 and 6 are the same as the standard cable system. Channels 5 and 6 are 2000 kHz higher than the standard cable system.

FINE TUNING indicator for receiving HRC or IRC cable systems

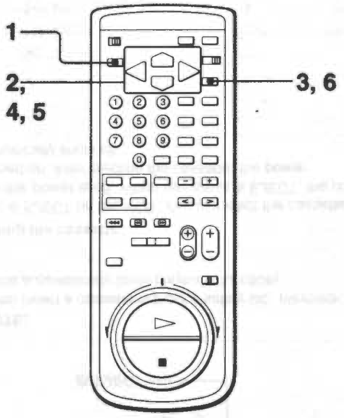
Even when the signals are received in optimal condition, the FINE TUNING indicator will not stay at the center position for channels higher or lower that the standard cable system due to the difference in the frequency.

NOTE:
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

Using The SET UP MENU

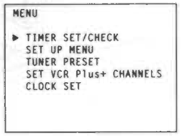
Before using your VCR, make your preferred audio and video display choices from the SET UP MENU.

Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select the items.



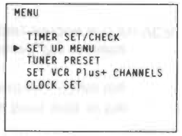
1 **Press MENU.**

The main MENU appears.



```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

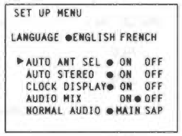
2 **Press ▲ or ▼ to move the cursor (▶) to SET UP MENU.**



```
MENU

  TIMER SET/CHECK
▶ SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

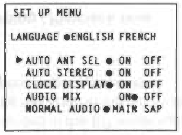
3 **Press EXECUTE.**

The SET UP MENU appears.



```
SET UP MENU

LANGUAGE ●ENGLISH FRENCH

▶AUTO ANT SEL ● ON  OFF
 AUTO STEREO  ● ON  OFF
 CLOCK DISPLAY● ON  OFF
 AUDIO MIX      ON ●OFF
 NORMAL AUDIO ●MAIN SAP
```

4 **Press ▲ or ▼ to move the cursor to the desired menu choice. (For Menu Choices, see the next page.)**
Next, press ◀ or ▶ to change the mode setting to ON or OFF.



```
SET UP MENU

LANGUAGE ●ENGLISH FRENCH

▶AUTO ANT SEL ● ON  OFF
 AUTO STEREO  ● ON  OFF
 CLOCK DISPLAY● ON  OFF
 AUDIO MIX      ON● OFF
 NORMAL AUDIO●MAIN SAP
```

5 **Press ◀ or ▶ to move the dot (●) to the desired setting.**

6 **Press EXECUTE to return to the original screen.**

The settings are stored. The displayed page is stored unless the power plug is disconnected.

Menu Choices

LANGUAGE (Canadian versions only)

You can preset your VCR to display screen information in either English or French.

AUTO ANT SEL (Automatic Antenna Selector)

- If your TV is connected only to VHF/UHF OUT on the VCR, set to ON.

When playing back a cassette, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV. To watch TV programs selected on the TV, press TV/VTR to turn off the VTR indicator in the display window.

- If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, set to OFF.

When playing back a cassette, select the input for the VCR on the TV.

To watch TV programs selected on the TV, select the tuner input.

AUTO STEREO

If a stereo program's reception is poor, set to OFF. The program is recorded in monaural but sound quality may improve. For details, see page 35.

CLOCK DISPLAY

To erase the current time and date from the on-screen display, set to OFF.

AUDIO MIX

To listen to sound recorded on both the hi-fi video track and the normal audio track of the audio tape, set to ON. For details, see page 32.

NORMAL AUDIO

When there is a SAP (Second Audio Program) broadcast, select SAP to record the SAP sound on the normal audio track. For details, see page 35.

NOTE:
The VCR automatically exits from the main MENU and SET UP MENU if you don't proceed for more than one minute.

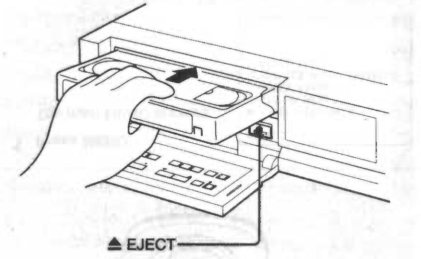
Playback

This section shows you how to play back a video cassette.

Inserting a Video Cassette

1 **Insert a video cassette as shown below.**

2 **Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.**
When the cassette has been loaded, the cassette indicator (▭) lights in the display window and the VCR turns on automatically.



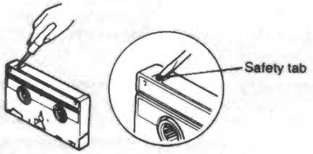
NOTE:
If you insert a cassette without a safety tab, playback starts automatically (auto playback function).

Ejecting the cassette

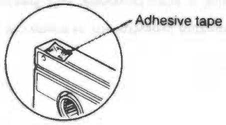
Press ≜ EJECT on the VCR. You can eject the cassette when the power is off. When you press ≜ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Protecting your cassette against accidental erasure

Cassettes have a safety tab to protect against accidental recording. Break off the safety tab with a screwdriver or other tool. If the safety tab is removed, the cassette will be ejected when you try to record on it.



To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.



Maximum recording time of a cassette

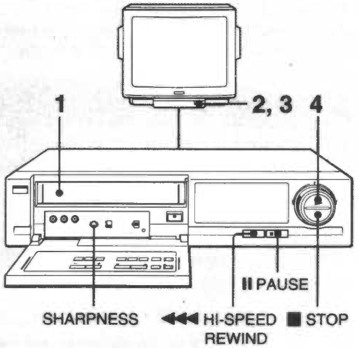
Recording in either the SP or EP mode is possible with this VCR. When recording, select the desired recording mode (SP or EP) using TAPE SPEED on the Remote Commander or the VCR. During playback, the VCR automatically detects the recording format, and then plays back the cassette in the appropriate mode. A cassette recorded in the EP mode runs three times as slowly as a cassette recorded in the SP mode. Refer to the chart below for the recording/playback times available.

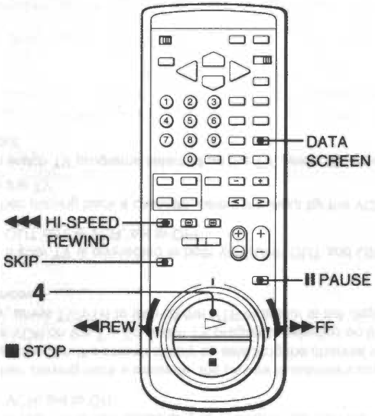
Cassette tape	Recording / Playback time	
	SP mode	EP mode
T-180	3 hr.	9 hr.
T-160	2 hr. 40 min.	8 hr.
T-120	2 hr.	6 hr.
T-60	1 hr.	3 hr.
T-30	30 min.	1 hr. 30 min.

Cassettes recorded in LP mode

Playback of cassettes recorded in LP mode is also possible with this VCR. However, playback in modes other than normal forward speed is not guaranteed. This VCR is not designed to record in the LP mode.

Playback





1 **Insert a cassette.**

2 **Turn on the TV.**

3 **If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, select the input for the VCR. If your TV is connected only to the VHF/UHF OUT on the VCR, select the channel for the VCR (CH 3 or CH 4).**

4 **Press ▷ PLAY.**

To stop playback:
Press ■ STOP.

To stop playback for a moment:
Press II PAUSE.
Press II PAUSE again or ▷ PLAY to resume playback.

To fast-forward the cassette at high speed during stop mode:
Turn the DUAL MODE SHUTTLE ring to the right (▶▶).

To rewind the cassette during stop mode:
Turn the DUAL MODE SHUTTLE ring to the left (◀◀).

To rewind the cassette at high speed:
Press ◀◀◀ HI-SPEED REWIND.

To rewind the cassette to its beginning and to playback automatically (auto playback function):
Press ▷ PLAY while depressing ◀◀◀ HI-SPEED REWIND or by using the DUAL MODE SHUTTLE ring.
You cannot use the Remote Commander for the auto playback function.

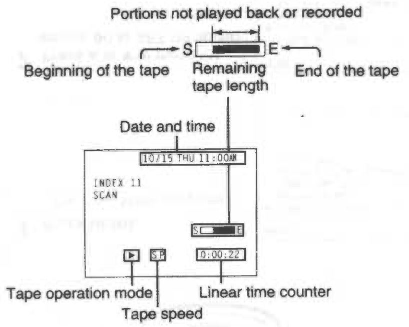
To get a sharper picture:
Turn the SHARPNESS control to SHARP.

To get a softer picture:
Turn the SHARPNESS control to SOFT.

When the cassette reaches its end:
The cassette automatically rewinds to the beginning (auto rewind), and power remains on.

The Data Screen

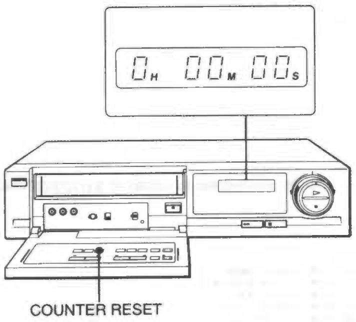
To delete or call up the data screen on the TV screen, press DATA SCREEN on the Remote Commander.



NOTES:
- The remaining tape length displayed is approximate. Therefore, use it only as an approximate reference.
- When you insert a cassette with a short tape length such as T-20, T-30 or a non-standard commercially available cassette, this indicator may not function correctly.
- The data screen display cannot be displayed on the screen during still mode, slow motion playback or high-speed playback.

Indexing Tape Contents

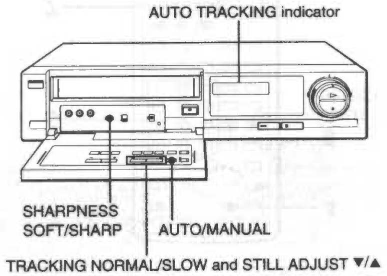
Before recording or playback, press COUNTER RESET on the VCR to reset the counter to zero. By noting the setting, you can find that point later by referring to the counter. Use the label on the cassette to list the programs and their counter readings.



NOTES ON COUNTER READING:
- After a cassette is ejected, the counter reading is retained. When a cassette is reinserted the counter returns to "0H00M00S".
- The counter does not work properly on the portions on which no recording has been made.

Playing Back Externally-Recorded Tapes

When playing back a cassette recorded on another VCR, the tracking condition is automatically adjusted. You can also adjust the tracking condition and the sharpness manually according to the following instructions.



Manual tracking adjustment

When the playback picture has streaks or snow during normal playback, adjust the picture manually with TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲.

Press either ▲ or ▼ for the best possible picture. The tracking meter will appear on the TV screen and the AUTO TRACKING indicator will turn off.

When the manual adjustment proves unsatisfactory, press both TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲. The tracking condition will return to the center position.

NORMAL TRACKING

Automatic tracking adjustment

The tracking condition is automatically adjusted on this VCR. The AUTO TRACKING indicator flashes while the VCR is searching for the optimal tracking condition and lights when optimum playback picture is obtained. The automatic tracking control is activated in the following conditions:

- When the cassette is inserted for the first time
- When the recording mode on the playback cassette is switched from SP to EP and back again
- When the picture is distorted by scratches on the cassette
- When the AUTO TRACKING indicator is turned on by pressing TRACKING AUTO/MANUAL after the picture is adjusted manually

Adjusting the sharpness

Turn the SHARPNESS SOFT/SHARP control toward SHARP for a sharper picture. Turn it toward SOFT for a softer picture.

NOTES:
- Auto tracking adjustment is not possible for cassettes recorded in LP mode.
- Auto tracking adjustment may be impossible and the tracking indicator may not appear on the TV screen when the recording condition of the cassette is poor.
- During auto tracking adjustment, streaks or noise may occur.
- The tracking indicator will only appear on the TV screen if the DATA SCREEN is in the ON position.

Selecting the Monitor Sound

You can play back cassettes on which stereo sound or bilingual programs are recorded.
Press AUDIO MONITOR to select the desired sound mode.
Each press of the button changes the display on the VCR.

NOTE:
When you play back a cassette recorded in monaural, the sound is heard in monaural regardless of the setting of the AUDIO MONITOR.

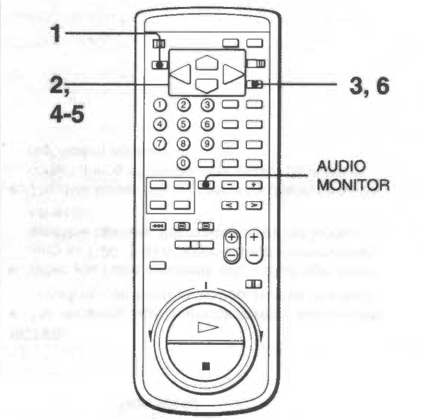
Sound Mode

Display	Sound to be heard	
	Stereo tape	Bilingual tape
STEREO	Stereo	Left and right channels
MAIN/L	Left channel	Left channel
SUB/R	Right channel	Right channel
None	Monaural on normal audio track	Sound on normal audio track (SAP)

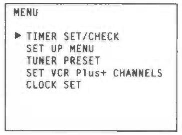
Listening to Mixed Hi-Fi and Normal Track Sound

You can hear sound recorded on the hi-fi video track and the normal audio track simultaneously. This allows you to listen to an audio-inserted cassette.

Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select items.

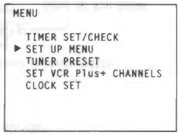


1 **Press MENU.**
The main MENU appears.



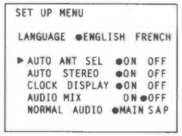
```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

2 **Press ▲ or ▼ to move the cursor (▶) to SET UP MENU.**



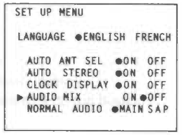
```
MENU

  TIMER SET/CHECK
▶ SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

3 **Press EXECUTE.**
The SET UP MENU appears.



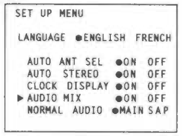
```
SET UP MENU

LANGUAGE  ●ENGLISH  FRENCH

▶ AUTO ANT SEL   ●ON  OFF
  AUTO STEREO    ●ON  OFF
  CLOCK DISPLAY  ●ON  OFF
  AUDIO MIX       ON ●OFF
  NORMAL AUDIO   ●MAIN SAP
```

4 **Press ▲ or ▼ to move the cursor to AUDIO MIX.**



```
SET UP MENU

LANGUAGE  ●ENGLISH  FRENCH

  AUTO ANT SEL   ●ON  OFF
  AUTO STEREO    ●ON  OFF
  CLOCK DISPLAY  ●ON  OFF
▶ AUDIO MIX       ON ●OFF
  NORMAL AUDIO   ●MAIN SAP
```

5 **Press ◀ or ▶ to move the dot (●) to ON.**



```
SET UP MENU

LANGUAGE  ●ENGLISH  FRENCH

  AUTO ANT SEL   ●ON  OFF
  AUTO STEREO    ●ON  OFF
  CLOCK DISPLAY  ●ON  OFF
▶ AUDIO MIX      ●ON  OFF
  NORMAL AUDIO   ●MAIN SAP
```

6 **Press EXECUTE to return to the original screen.**

NOTES:
- When you set AUDIO MIX to ON, the AUDIO MONITOR button does not function.
- Reset to OFF after listening to the sound in audio mix mode.

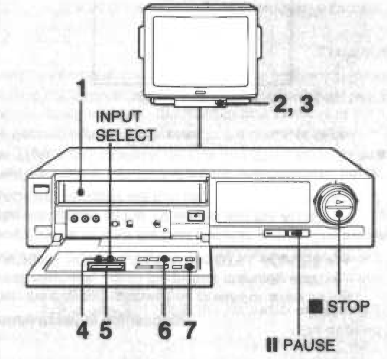
Recording TV Programs

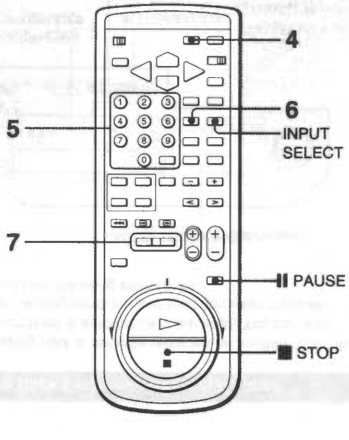
Before you begin, check the following points:

- Make sure that the connections have been made correctly (see pages 6 to 14).
- Check the input mode indicator in the display window of the VCR.
  Press INPUT SELECT to light the TUNER indicator in the display window.

CAUTION:
Television programs, films, video cassettes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization for the cable television transmission and/or program owner.

Recording TV Programs





1 **Insert a cassette.**
The VCR turns on automatically (auto power on).

2 **Turn on the TV.**

3 **If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, select the input for the VCR.**

4 **If your TV is connected only to VHF/UHF OUT, set the TV to the correct channel (CH 3 or CH 4), then press TV/VTR so that the VTR indicator lights up.**
Skip this step if your VCR is connected to both the VHF/UHF OUT and LINE OUT.

5 **Select the channel to be recorded with CHANNEL +/– or channel number buttons and ENTER.**

6 **Select SP or EP with TAPE SPEED (SP/EP).**
To select the best recording tape speed, see "Maximum Recording Time of a Cassette" on page 28.

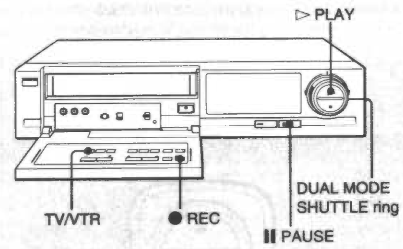
7 **Press the two ● REC buttons on the Remote Commander at the same time, or the ● REC button on the VCR.**

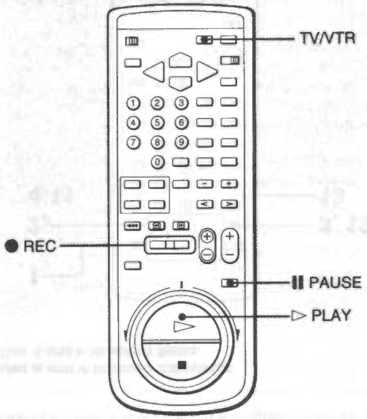
To stop recording:
Press ■ STOP.

To pause the cassette:
Press II PAUSE. To resume recording, press II PAUSE. When the recording pause mode lasts for approximately 5 minutes, the VCR enters the stop mode.

When the cassette reaches its end:
The cassette rewinds to the beginning and the power remains on.

Pausing





Technique 1

You can stop recording an unwanted scene and resume recording smoothly.

1 **Press II PAUSE when an unwanted scene appears.**
Recording will stop and the VCR enters the recording pause mode.

2 **Press II PAUSE at the desired point to release the pause mode.**
Recording resumes from the point set in step 1.

Technique 2

When an unwanted scene has already started recording, you can return the cassette to the desired point, have the VCR standby in the recording pause mode, and resume recording at the desired scene.

1 **Press II PAUSE to set the VCR to the recording pause mode.**

2 **Turn the DUAL MODE SHUTTLE ring to the left to search for the point from which you wish to continue recording.**

3 **Release the DUAL MODE SHUTTLE ring at the desired point.**
After an instant in still mode, the VCR automatically enters the recording pause mode.

4 **Press II PAUSE.**
Recording resumes.

Recording with the TV Off

Turn off the power of the TV or color monitor.
There will be no interference with the recording.

Watching One TV Program While Recording Another

1 **Press TV/VTR so that the VTR indicator goes off.**

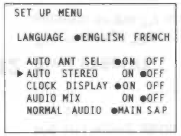
2 **Select the channel you want to watch on the TV.**

VTR Indicator	Picture on the TV Screen
Lit	Channel selected by the VCR or the playback picture of the VCR
Unlit	Channel selected by the TV

Recording Multi-channel TV Sound (MTS) Broadcasts

To record a stereo broadcast:

When a stereo broadcast program is received, the STEREO indicator appears in the display window of the VCR. The stereo program is automatically recorded in stereo. If a stereo program's reception is poor, set AUTO STEREO to OFF in the SET UP MENU. (See page 27.) The sound is heard in monaural but the noise is reduced.

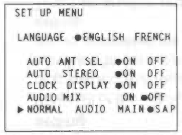


```
SET UP MENU

LANGUAGE ●ENGLISH FRENCH

  AUTO ANT SEL  ●ON  OFF
▶ AUTO  STEREO    ON ●OFF
  CLOCK DISPLAY ●ON  OFF
  AUDIO MIX       ON ●OFF
  NORMAL  AUDIO ●MAIN SAP
```

To record SAP (Second Audio Program) broadcast:

Normally, set NORMAL AUDIO to MAIN in the SET UP MENU. The main sound is recorded on the normal track. To record the SAP sound on the normal audio track, set NORMAL AUDIO to SAP in the SET UP MENU.

To monitor the SAP sound during recording, press AUDIO MONITOR to light the SAP indicator in the display window.



```
SET UP MENU

LANGUAGE ●ENGLISH FRENCH

  AUTO ANT SEL  ●ON  OFF
  AUTO  STEREO  ●ON  OFF
  CLOCK DISPLAY ●ON  OFF
  AUDIO MIX       ON ●OFF
▶ NORMAL  AUDIO  MAIN●SAP
```

NOTES:
- When not recording an SAP broadcast, select MAIN. If you select SAP, no sound is recorded on the normal audio track.
- When the TV is connected only to the VHF/UHF OUT on the VCR, you cannot hear the program in stereo.

Timer Recording

The timer recording function lets you preset your VCR to record up to eight programs within a one-month period. You'll do this procedure from the TIMER SET/CHECK display on your TV.

As a First Step

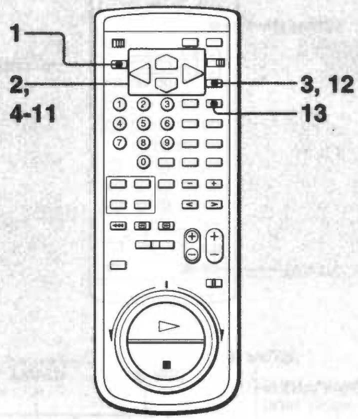
Before setting the timer, make sure that:

- The time and date clock is set correctly. (See "Setting the Time and Date" on page 20.)
- The cassette is long enough to record all the programs.
- The safety tab on the cassette is intact. If you insert a cassette with no safety tab and press TIMER REC (ON/OFF), the cassette automatically ejects from the VCR.
- The VCR and TV are both turned on.

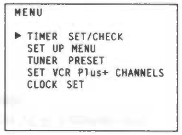
Setting The Timer

EXAMPLE: Here's how to record a program broadcast on channel 26 from 9:00 pm to 10:55 pm on Friday, July 10 in EP mode:

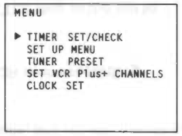
Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select items.



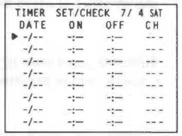
1 **Press MENU.**
The main MENU appears.



2 **Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.**

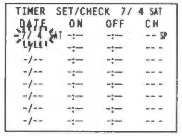


3 **Press EXECUTE.**
The TIMER SET/CHECK display appears on the screen. A short beep alerts you if the clock is not set properly. To reset the clock, refer to "Setting the Time and Date" (page 20).



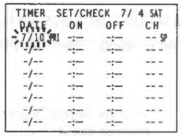
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
▶-/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

4 **Press ▶.**
Make sure that today's date is flashing. If it isn't, reset the clock to the correct time. See "Setting the Time and Date" (page 20).



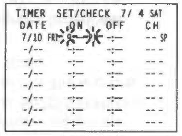
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
7/ 4 SAT -:--   -:--   -- SP
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

5 **Press ▲ to set the month and date to 7/10 FRI.**
The day of the week is automatically set.



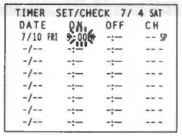
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
7/10 FRI -:--   -:--   -- SP
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

6 **Press ▶ to flash the hours section under "ON" then ▲ or ▼ until 9 PM appears.**



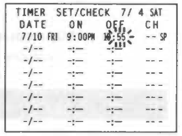
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
7/10 FRI 9:--PM -:--   -- SP
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

7 **Press ▶ to flash the minutes under "ON", then ▲ or ▼ until 00 appears.**



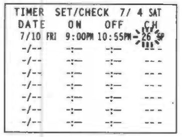
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
7/10 FRI 9:00PM -:--   -- SP
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

8 **Press ▶.**
The cursor blinks in the time field under the "OFF" column. Set the time to finish recording, referring to steps 6 and 7.



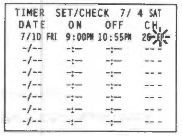
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF    CH
7/10 FRI 9:00PM 10:55  -- SP
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
 -/--    -:--   -:--   ---
```

9 **Press ▶ to flash the "CH" field, then press ▲ or ▼ until 26 appears.**
Only the channels set in the VCR will appear. You can also use the CHANNEL +/– or channel number buttons.



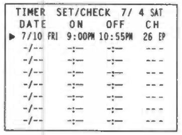
```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF      CH
7/10 FRI 9:00PM 10:55PM 26 SP
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
```

10 **Press ▶ or TAPE SPEED to flash the recording speed position, then ▲ or ▼ until EP appears.**
To change or correct a setting before entering it, press ◀ to return to the item you wish to change.



```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF      CH
7/10 FRI 9:00PM 10:55PM 26 EP
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
```

11 **Press ▶ to store the setting.**
When all of the settings stop flashing and display a ▶ in the leftmost column, you've completed the setting.
To preset another program, move the cursor to the next line and repeat steps 4 to 11.



```
TIMER  SET/CHECK  7/ 4 SAT
 DATE     ON     OFF      CH
▶7/10 FRI 9:00PM 10:55PM 26 EP
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
 -/--    -:--   -:--    ---
```

12 **Press EXECUTE.**
The message "Please push TIMER REC to set timer" appears on the TV screen.

13 **Press TIMER REC (ON/OFF).**
The VCR enters the timer recording standby mode and the TIMER REC (recording) indicator in the display window lights up.

To stop timer recording:
To stop timer recording while a program is being recorded, press TIMER REC (ON/OFF).

NOTES:

- To change or correct the setting before completing it, press ◀ to return to the item you wish to change.
- To record video sources from LINE IN 1 or 2 jacks, press INPUT SELECT in step 4 to 11 to move the screen cursor to LINE 1 or 2 in the "CH" field. This cursor returns to channel number on the third press.
- If you don't proceed for more than one minute, the VCR automatically exits from the TIMER SET/CHECK menu.

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording. Daily recording records the same program every day of the week while weekly recording records the same program on the same day, every week. Follow steps 1 to 4 in "Setting the Timer" (page 36).
Each time you press ▼, the indicator under the "DATE" column changes to one of these choices:

SUN—SAT (Every day of the week)
⬇
MON—SAT (Every day except Sunday)
⬇
MON—FRI (Every day except Saturday and Sunday)
⬇
EVERY SAT
·
·
EVERY TUE
⬇
EVERY MON
⬇
EVERY SUN

When you set and transmit your programs to the VCR, the corresponding indicator lights up in the display window.

The Timer Recording Standby Mode

When you return the VCR to the timer recording standby mode, you can record any previously preset programs. The VCR turns on automatically to record the first preset program. When it finishes recording, the power automatically shuts off.

To stop timer recording, press TIMER REC (ON/OFF).

Buttons Operable During Timer Recording

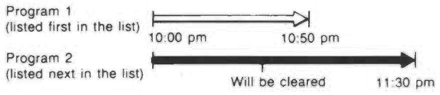
TIMER REC (ON/OFF)	To stop timer recording. (See "Indexing Tape Contents," page 30.)
COUNTER RESET	(See "Indexing Tape Contents," page 30.)
TV/VTR	(See "Watching One TV Program While Recording Another," page 35.)
DATA SCREEN	(See "The Data Screen," page 30.)
MENU	For checking the programs only. (See "Checking the Timer Settings," page 40.)

NOTE:
If a power interruption occurs during timer recording, recording will stop and your VCR will turn off. If power is restored within three hours, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than three hours, any presettings will be erased and you'll need to reset the time and date for your programs. Note that the tape counter will return to "0H00M00S".

Overlapping Timer Recordings

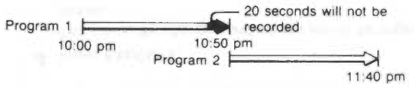
Case 1
If you preset two programs to record at the same time . . .

The program listed first on the TIMER SET/CHECK display has priority over the other programs. The timer settings for lower priority programs will be deleted from the TIMER SET/CHECK display when recording begins for the first program.



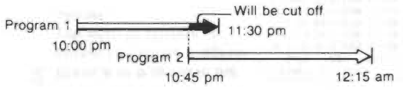
Case 2
If you set program 2 to record at the same time you set program 1 to finish recording . . .

The last 20 seconds of program 1 will not be recorded.



Case 3
If you set program 2 to record before program 1 has finished recording . . .

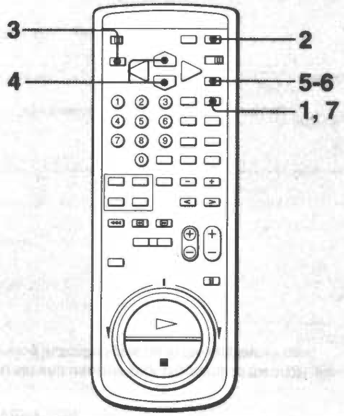
Program 2 will begin recording before program 1 has finished.



Checking the Timer Settings

Here's how to display your timer settings to confirm the programs you wish to record.

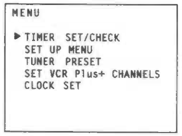
Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select items.



1 **Press TIMER REC (ON/OFF).**
The TIMER REC (recording) indicator in the display window turns off.

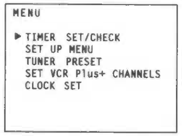
2 **Press POWER.**

3 **Press MENU.**
The main MENU appears.



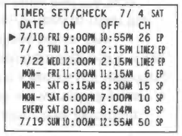
```
MENU

▶ TIMER  SET/CHECK
  SET UP MENU
  TUNER  PRESET
  SET VCR Plus+ CHANNELS
  CLOCK  SET
```

4 **Press ▲ or ▼ to move the cursor (▶) to TIMER SET/ CHECK.**



```
MENU

▶ TIMER  SET/CHECK
  SET UP MENU
  TUNER  PRESET
  SET VCR Plus+ CHANNELS
  CLOCK  SET
```

5 **Press EXECUTE.**
The TIMER SET/CHECK display appears.



```
 TIMER SET/CHECK  7/ 4 SAT
  DATE    ON      OFF    CH
▶ 7/10 FRI 9:00PM 10:55PM 26 EP
  7/ 9 THU 1:00PM  2:15PM LINE2 EP
  7/22 WED 12:00PM 2:15PM LINE2 EP
  MON- FRI 11:00AM 11:15AM  6 EP
  MON- SAT 8:15AM  8:30AM 15 SP
  MON- SAT 6:00PM  7:00PM 10 SP
  EVERY SAT 8:00PM 8:54PM  8 SP
  7/19 SUN 10:00AM 12:55AM 50 SP
```

6 **Press EXECUTE to return to the original screen.**

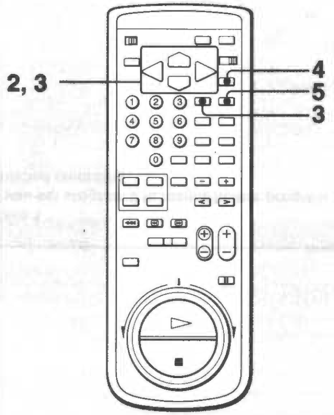
7 **Press TIMER REC (ON/OFF).**
The VCR returns to the timer recording standby mode.

NOTES:
- If you set a program to record only one time, that setting is erased from the TIMER SET/CHECK display when the recording has finished.
- To check the timer settings during timer recording, follow steps 3 to 6 above.

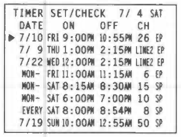
Changing or Cancelling the Timer Settings

Here's how to change or cancel any timer settings from the TIMER SET/CHECK display:

Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select items.

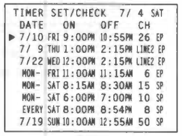


1 **Display the TIMER SET/ CHECK menu on the TV screen by following the procedures outlined in "Checking the Timer Settings" on page 40.**



```
 TIMER SET/CHECK  7/ 4 SAT
  DATE    ON      OFF    CH
▶ 7/10 FRI 9:00PM 10:55PM 26 EP
  7/ 9 THU 1:00PM  2:15PM LINE2 EP
  7/22 WED 12:00PM 2:15PM LINE2 EP
  MON- FRI 11:00AM 11:15AM  6 EP
  MON- SAT 8:15AM  8:30AM 15 SP
  MON- SAT 6:00PM  7:00PM 10 SP
  EVERY SAT 8:00PM 8:54PM  8 SP
  7/19 SUN 10:00AM 12:55AM 50 SP
```

2 **Press ▲ or ▼ to move the cursor (▶) to the program you wish to change or cancel.**



```
 TIMER SET/CHECK  7/ 4 SAT
  DATE    ON      OFF    CH
▶ 7/10 FRI 9:00PM 10:55PM 26 EP
  7/ 9 THU 1:00PM  2:15PM LINE2 EP
  7/22 WED 12:00PM 2:15PM LINE2 EP
  MON- FRI 11:00AM 11:15AM  6 EP
  MON- SAT 8:15AM  8:30AM 15 SP
  MON- SAT 6:00PM  7:00PM 10 SP
  EVERY SAT 8:00PM 8:54PM  8 SP
  7/19 SUN 10:00AM 12:55AM 50 SP
```

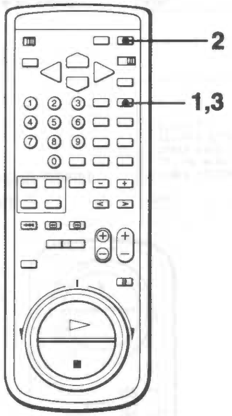
3 **To change a program, select the item to be changed by pressing ◀ or ▶, then make changes by pressing ▲ or ▼.**
To cancel it, press TIMER CLEAR.
Repeat this step to change or cancel other settings.

4 **Press EXECUTE.**
This stores the changes and returns you to the original screen.

5 **Press TIMER REC (ON/OFF).**
This returns you to the timer recording standby mode.

Using the VCR Before Timer Recording Starts

If you want to use your VCR while it's in the timer recording standby mode, you must first turn off the TIMER REC (recording) indicator in the display window. Here's how:



1 **Press TIMER REC (ON/OFF).**
The TIMER REC (recording) indicator in the display window turns off and the VCR leaves the timer recording standby mode.

2 **Press POWER.**
The VCR is ready to use.

3 **After using the VCR, press TIMER REC (ON/OFF).**
The VCR returns to the timer recording standby mode and the TIMER REC (recording) indicator lights up.

Introducing VCR Plus+

VCR Plus+ is a new feature used in Sony VCRs that simplifies the task of programming your VCR to make unattended recordings. Here's how it works:

Whenever you want to record a TV program, all you need to do is to look up the program's "PlusCode", a number assigned to each program that's published in the TV section of most newspapers, cable TV listings, and even *TV Guide* magazine.

PlusCode

5:30 14 MOVIE — Musical (2hrs.) 33044
2 SPORTS — Golf (1hr. 25min.) 42060
CNN — NEWS 9974
6:30 2 3 4 DRAMA — Comedy (2hrs.) 17390
5 SCIENCE AND TECHNOLOGY
(1hr. 15min.) 73457

Then, just enter the number of the program you want—using the Remote Commander, if you wish—and the VCR is automatically programmed to record that show. It's that simple. With VCR Plus+, you no longer have to go through a lengthy and often repetitive procedure when you set start and stop times, channel numbers, and dates. All this information is automatically sent to your VCR when you enter the program's PlusCode!

Of course, there's some setup you'll need to do before you use VCR Plus+ for the first time. But after this initial setup, just think of how much easier it'll be to record your favorite TV programs, cable movies, and sporting events—all with the touch of a few buttons. VCR Plus+ makes programming your VCR easier than ever!

NOTE:
If PlusCodes aren't yet available in your area, they'll probably be introduced soon. Check with your local newspaper or cable TV company for details.

VCR Plus+ Setup Instructions

Setting up your VCR to use VCR Plus+ involves coordinating the TV channel number (the number you turn to on your TV or VCR to watch a program) with the guide channel (the number that's assigned to that channel in your program guide).

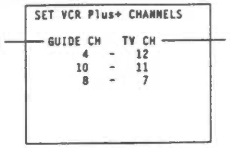
If you don't have cable TV (i.e., if your TV receives its signal from an antenna only), the TV channel number and the guide channel number will probably be the same, in which case you'll only have to check that the two numbers match. For numbers that don't match, you must first perform the procedures that follow to get these channel numbers synchronized with each other.

To get the guide channel numbers, find the Channel Line-up Chart in the program guide for your area that features VCR PlusCodes. It usually looks like the example to the right.

If you have cable TV, you should then get the TV channel numbers for each channel from your cable company. (You may already know them.) Then for channel numbers that are different, enter the program guide channels (from the Program Guide), on the left, and the actual TV channels (from your cable system), on the right, as shown on page 44.

Example of "Channel Line-up Chart" for Cable TV

CABLE TV		Guide channel number
A&E	Arts & Entertainment Network	39
AMC	American Movie Classics	35
BRV	Bravo (program grids only)	54
CNN	Cable News Network	42
CSP	C–SPAN	28
DIS	The Disney Channel	53
DSC	The Discovery Channel	37
ESN	ESPN	34
FAM	The Family Channel	47
HBO	Home Box Office	33
LIF	Lifetime	46
MAX	Cinemax	45
MSG	Madison Square Garden Network	19
MTV	Music Television	48
NIK	Nickelodeon	38
SC	Sports Channel	59
SCA	Sports Channel America	70
SHO	Showtime	41
TBS	TBS SuperStation	43
TMC	The Movie Channel	58
TNN	The Nashville Network	49
TNT	Turner Network Television	52
USA	USA Network	44



```
SET VCR Plus+ CHANNELS

GUIDE CH   TV CH
   4    -   12
  10    -   11
   8    -    7
```

Program listing guide channel

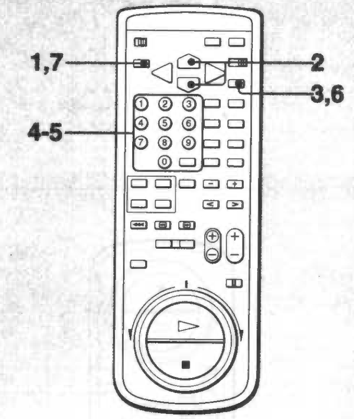
Your actual TV channel

For each channel your VCR receives, use the Channel Line-Up Chart to check that the channel numbers match. For example, if HBO is listed in the Channel Line-Up Chart on channel 33, and your VCR receives HBO on channel 15, you need to coordinate these numbers using the following procedures. For channels in which the numbers are the same (for example, if your VCR receives HBO on channel 33, and the guide channel number is 33), you can skip these procedures.

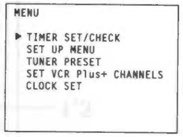
Example:

Guide Channel (from "Channel Line-Up Chart")	**TV Channel**
33 (Home Box Office)	15

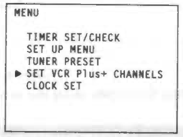
Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select items.



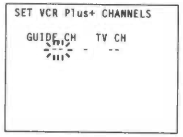
1 Press MENU.
The main MENU appears.


```
MENU

▶ TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CLOCK SET
```

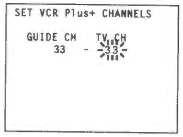
2 Press ▼ or ▲ to move the cursor (▶) to SET VCR Plus+ CHANNELS.


```
MENU

  TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
▶ SET VCR Plus+ CHANNELS
  CLOCK SET
```

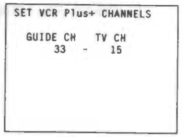
3 Press EXECUTE.
The SET VCR Plus+ CHANNELS menu appears.
The "GUIDE CH" field blinks.


```
SET VCR Plus+ CHANNELS

  GUIDE CH   TV CH
     --    -   --
```

4 In the "GUIDE CH" field, enter 33 (the number assigned to this channel in the Channel Line-Up Chart) and press ENTER.
The "TV CH" field starts to blink.

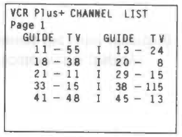

```
SET VCR Plus+ CHANNELS

  GUIDE CH   TV CH
     33    -  33
```

5 In the "TV CH" field, enter 15 (the number to which you tune your VCR to watch this channel) and press ENTER.


```
SET VCR Plus+ CHANNELS

  GUIDE CH   TV CH
     33    -  15
```

NOTE:
The TV Channel setting will be different whether you use cable TV or not. Please refer to "Preparation" on page 6.

6 For each channel in which the TV channel differs from the guide number, repeat steps 4 and 5, using the menus that are displayed.
To check your channel settings, press EXECUTE.


```
VCR Plus+ CHANNEL  LIST
Page 1
  GUIDE  TV    GUIDE  TV
    11 - 55  I  13 -  24
    18 - 38  I  20 -   8
    21 - 11  I  29 -  15
    33 - 15  I  38 - 115
    41 - 48  I  45 -  13
```

7 When you've finished, press MENU to exit.

Recording Programs Using VCR Plus+

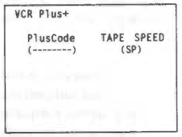
To use VCR Plus+ to record programs, all you need is the program's PlusCode, which you'll find in the program listings in your local newspaper, cable TV guide, or *TV Guide* magazine.
For example, to record the following program, just use the following procedures:

PlusCode

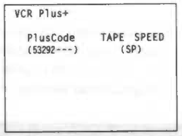
EXAMPLE: 13 **MOVIE**---Comedy (2hrs.) 53292

NOTE:
You can set the program without opening the VCR Plus+ menu. Refer to the display window on the VCR.

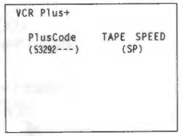
1 Press VCR Plus+.
The VCR Plus+ TIMER SET menu appears.


```
VCR Plus+

  PlusCode     TAPE  SPEED
  (--------)      (SP)
```

2 Enter 53292 (the program's PlusCode) in the PlusCode field.
If you make a mistake, press TIMER CLEAR and enter the PlusCode again.


```
VCR Plus+

  PlusCode     TAPE  SPEED
  (53292---)      (SP)
```

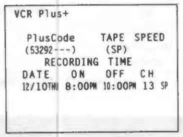
3 To select the cassette's recording speed (SP or EP), press TAPE SPEED.
Unless you change the cassette speed, SP is used. See "Maximum recording time of a cassette" on page 28 for information about cassette speeds.


```
VCR Plus+

  PlusCode     TAPE  SPEED
  (53292---)      (SP)
```

4 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
See the following chart for details of these options.

ONCE:	Records scheduled programs one time only.
WEEKLY:	Records every week at the same scheduled time.
DAILY M-F:	Records Monday to Friday at the same scheduled time.

The VCR Plus+ menu displays the recording information: date, program start and stop times, channel number, and tape speed.
If you make a mistake, press TIMER CLEAR, and start from the beginning.


```
VCR Plus+

 PlusCode     TAPE  SPEED
 (53292---)     (SP)
    RECORDING  TIME
 DATE    ON     OFF    CH
 12/10THU 8:00PM 10:00PM 13 SP
```

5 If you want to set another program, repeat steps 2 to 5.

6 Insert a cassette into your VCR.

7 Press TIMER REC (ON/OFF) to set the VCR's recording timer.
The VCR enters the timer recording standby mode. Your VCR is now set up to record the programs you've selected. The VCR will turn on automatically, record the program, and then turn off until the next programmed show is ready for broadcast.

For checking , changing , cancelling the settings, see pages 40 and 41.

NOTES:
You can't set the timer using PlusCodes in the following cases:

- When the VCR is turned off
- While the VCR is timer-recording or quick-timer recording mode
- When the VCR is in the timer-recording standby mode

The timer doesn't work properly in the following cases:

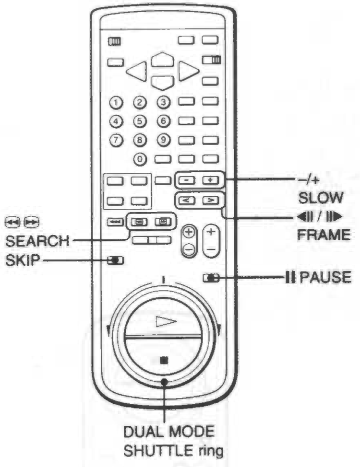
- When you select DAILY for a Saturday and Sunday program
- When you select WEEKLY or DAILY for a program more than seven days ahead. (The WEEKLY and DAILY settings only work for the current week.)
- When you enter a program's PlusCode that has already ended

Variable Speed Playback

The following section explains the advanced playback functions you can do with your VCR.

Variable Speed Playback

Using the DUAL MODE SHUTTLE ring on your VCR or Remote Commander, you can play cassettes at a variety of forward and reverse speeds. You can also freeze a picture using the pause function.



Still Picture

When playing back a cassette, press II PAUSE to hold the picture in one place. To resume normal playback, press either ▷ PLAY or **II** PAUSE. If you leave your VCR in the pause mode, normal playback resumes after approximately 5 minutes.

Picture Search

By turning the DUAL MODE SHUTTLE ring either clockwise for forward viewing or counterclockwise for viewing in reverse, you can control the cassette playback speed.

- **Picture Search During Playback or Pause Modes**

While playing or pausing a cassette, turn the DUAL MODE SHUTTLE ring until the double arrows ◀◀ or ▶▶ appear in the display window.
A high-speed picture without sound displays on the screen until you release the ring.

When you release the DUAL MODE SHUTTLE ring, it returns to its original position.
If you release the ring while in the pause mode, the picture returns to pause. If you release it during playback, the picture returns to playback.

NOTE:
If you quick search a cassette recorded in the LP cassette speed, your picture may change to black and white, depending on the TV you're using.

- **Picture Search While Fast-Forwarding or Rewinding a Cassette**

When fast-forwarding or rewinding a cassette, turn the DUAL MODE SHUTTLE ring to preview a high-speed picture (clockwise for forward viewing or counterclockwise for reverse viewing).

When you release the ring, it returns to its original position and the VCR continues fast-forwarding or rewinding.

Locked Picture Search

This feature lets you lock in and view a high-speed picture while playing or pausing a cassette. In the play or pause mode, press ⏪ SEARCH (reverse) or ⏩ SEARCH (forward) on the Remote Commander.
To resume normal playback, press ▷ PLAY.

Skip Playback

While playing a cassette, press SKIP on the Remote Commander.
This feature lets you view your cassette at high speed for about 30 seconds before resuming normal playback.

Slow Motion Playback

During playback or playback pause mode, press I▶ SLOW + or – on the Remote Commander. Change the slow motion speed with the + or – buttons.
Press + to increase the playback speed, and – to decrease the playback speed.

Frame-by-Frame Picture

During the playback pause mode, press FRAME II▶ > to advance the picture one frame or ◀II < FRAME to reverse the picture one frame.
Each time you press the button, the picture moves one frame. To resume normal playback, press ▷ PLAY.

Picture Adjustment During Variable Speed Playback

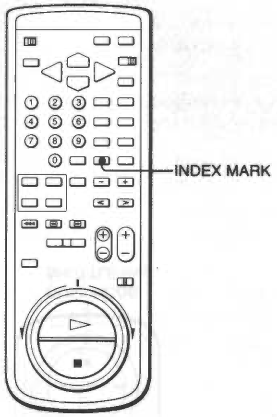
If a picture played in slow motion displays streaks or has poor sound quality, adjust the picture with the TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ buttons inside the front panel. You can adjust the picture more easily by changing the speed closer to normal playback by pressing I▶ SLOW +.
If the picture appears to shake in the still mode, adjust it using the STILL ADJUST ▼/▲ buttons inside the front panel until the picture stabilizes.
When pausing a cassette, you may notice a band at the top or bottom of the screen. Adjust the picture by playing back the cassette in slow motion and using the TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ buttons located inside the VCR's front panel.

NOTE:
Some snow or streaks are unavoidable when playing back a cassette in the reverse or reverse slow modes.

Index Function

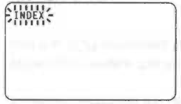
You can find specific locations on a cassette using your VCR's index function.

Marking Index Signals

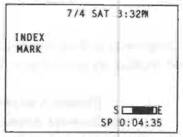


Whenever you mark an index, an index signal flashes in the VCR's display window and the INDEX MARK indicator appears on your TV screen.

Display window



TV screen



Automatic Index Mark
An index signal automatically marks the beginning of a program when you start recording it.

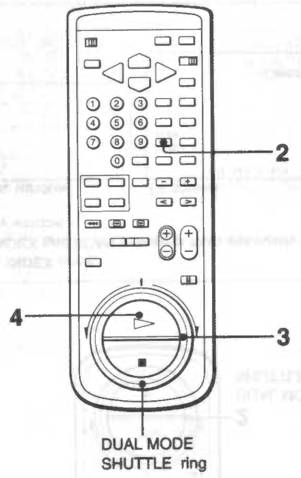
Manual Index Mark
When recording or playing a cassette, you can manually mark an index signal by pressing INDEX MARK on the Remote Commander.

NOTES:
- When marking index signals, leave an interval of at least 2 minutes between them so that the VCR can detect the signals correctly.
- When you mark an index signal during playback, the recorded sound, though not erased, is inaudible.
- You cannot mark an index signal in the following cases:

— On a cassette without a safety tab.
— On an unrecorded portion of a cassette.
— Immediately before a point on the cassette where the cassette speed (EP or SP) changes.
— When playing a cassette recorded in LP mode.

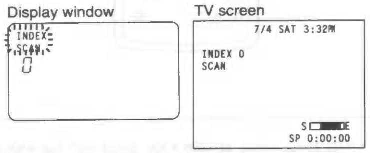
Playing Back from the Index Point — Index Scan

Here's how to find and play a program you've marked with an index signal:

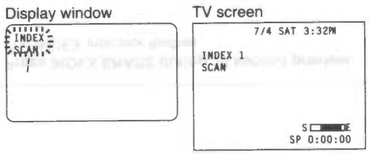

2
3
4
DUAL MODE SHUTTLE ring

1 **Insert an indexed cassette into your VCR.**

2 **Press INDEX once.**
The INDEX and SCAN indicators flash alternately in the display window.


Display window
INDEX
SCAN
0
TV screen
7/4 SAT 3:32PM
INDEX 0
SCAN
S E
SP 0:00:00

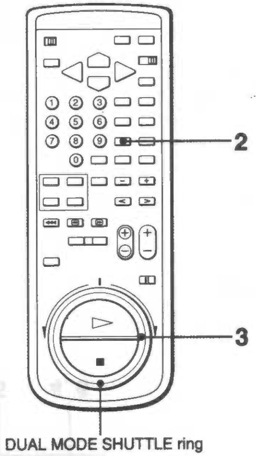
3 **Turn the DUAL MODE SHUTTLE ring clockwise to find the previous program, or counter clockwise to find the next program.**
The INDEX SCAN indicator flashes continuously while scanning.
The index scan locates the next marked index signal and plays about 10 seconds of tape prior to the signal. The VCR then rewinds or advances to the next index signal. Every time the VCR finds an index signal, playback begins and the displayed index number increases.


Display window
INDEX
SCAN
TV screen
7/4 SAT 3:32PM
INDEX 1
SCAN
S E
SP 0:00:00

4 **When you find the program you want, press ▷ PLAY.**
Playback starts from that point.

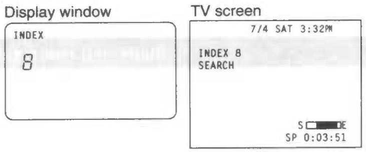
Locating an Index — Index Search

Locate an index by indicating how many index signals ahead or behind that program is from the cassette's current position. Here's how:

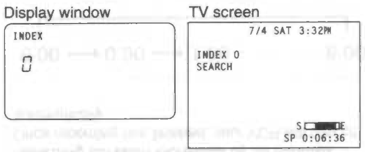

2
3
DUAL MODE SHUTTLE ring

1 **Insert an indexed cassette into your VCR.**

2 **Press INDEX until the index number for the desired program appears in the display window or on your TV screen.**
The VCR exits from the index mode, if you pass index number 19.


Display window
INDEX
8
TV screen
7/4 SAT 3:32PM
INDEX 8
SEARCH
S E
SP 0:03:51

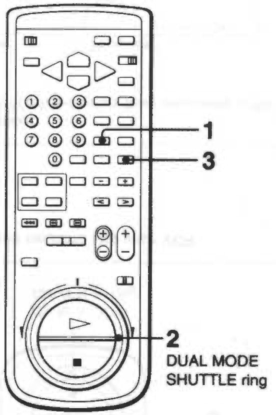
3 **Turn the DUAL MODE SHUTTLE ring clockwise to locate an upcoming index signal or counterclockwise for a prior index signal.**
The cassette rewinds or advances to the next index. Each time an index signal is detected, the index number decreases. When the number reaches 0, your VCR will begin to play.


Display window
INDEX
0
TV screen
7/4 SAT 3:32PM
INDEX 0
SEARCH
S E
SP 0:06:36

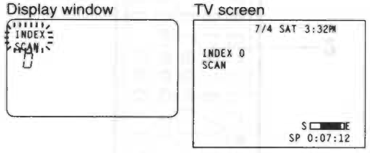
Index Function

Erasing Index Signals

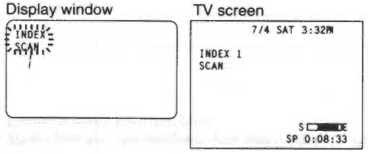
To remove any unwanted index signals, follow these steps:



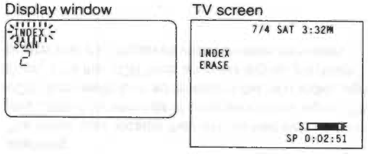
1 Press INDEX once.
The INDEX and SCAN indicators flash alternately in the display window.



2 Turn the DUAL MODE SHUTTLE ring until the index you want to erase appears on your TV screen.
Each time an index is detected, the VCR plays back the indexed program for approximately 10 seconds. It then rewinds or advances to the next index signal. This 10 second preview lets you decide whether you've located the program you wish to erase.



3 Press INDEX ERASE during 10 second preview.
The INDEX indicator flashes.



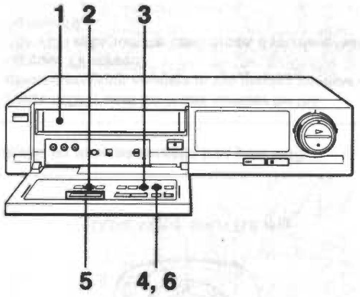
NOTES:
- While the index signal is being erased, the sound is inaudible.
- Index signals marked just before or after a change to the SP or EP recording mode cannot be erased.
- Index signals marked on a cassette recorded in LP mode cannot be erased.
- Index signals marked on the beginning of the tape may not be erased.

Quick-Timer Recording

This function is convenient for recording programs without going through the entire timer setting procedure. Note, however, that it provides only an approximate setting for the program you wish to record.

NOTE:
Before you begin, make sure the clock has been set, then ensure that the timer recording function is turned off by checking the TIMER REC (recording) indicator. If the indicator is lit, press TIMER REC ON/OFF to turn it off.

Quick-Timer Recording



If you're currently recording, skip to step 7.

1. **Insert a cassette into your VCR.**
2. **Press INPUT SELECT to light the TUNER in the display window.**
3. **Select the desired recording speed (SP or EP) by pressing TAPE SPEED inside the front panel.**
4. **Press QUICK TIMER on the VCR.**
   If you insert a cassette without its safety tab, your VCR will eject the cassette.
5. **Select the channel you wish to record using the CHANNEL +/– or channel number buttons. Press ENTER while the channel display flashes.**
6. **Press QUICK TIMER again to start recording.**
7. **Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window. Each time you press QUICK TIMER, the recording duration increases by 30 minutes.**
   Once recording has finished, your VCR will turn off automatically.

0:00 → 0:30 → 1:00 · · · · · 8:00

To stop quick-timer recording:
To stop quick-timer recording while a program is being recorded, press TIMER REC ON/OFF.

NOTES:
- If your cassette ends during quick-timer recording, recording stops and the VCR turns off. The cassette will not rewind automatically.
- If a power interruption occurs during quick-timer recording, recording will stop and your VCR will turn off. If the interruption lasts less than three hours and the power is restored before the recording end time, recording will start again from that point.

Buttons Operable During Quick-Timer Recording

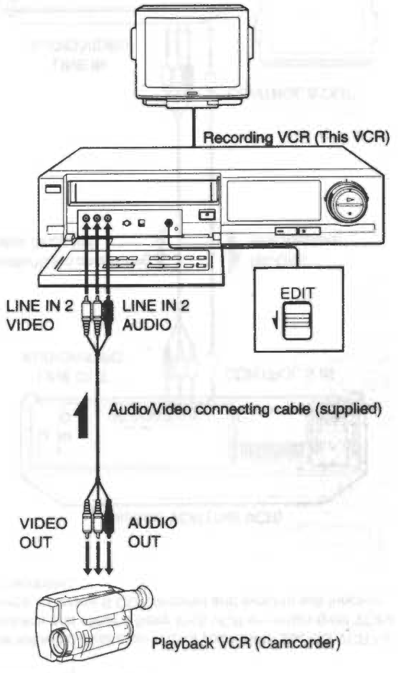
TIMER REC (ON/OFF)	To stop quick-timer recording
QUICK-TIMER	To change recording duration
COUNTER RESET	To reset the counter to zero
INDEX MARK	To record an index signal
TV/VTR	To watch the picture broadcast on another channel (TV)
MENU	Only operable to check the timer recording settings. (See "Checking the Timer Settings," on page 40.)

Editing

Using an additional VCR, you can record programs from one VCR to the other. Here's how:

Editing from Another VCR

Here's how to edit from another VCR (such as an 8mm video camera recorder for playback) when using this VCR for recording.



Before you start:
- Select LINE 1 or LINE 2 with INPUT SELECT, whichever the playback VCR is connected to.
- Select SP or EP with TAPE SPEED.
- Select EDIT position to light the EDIT indicator in the display window.

NOTE:
If your playback VCR has an editing function, select it to reduce static and improve reception.

How to edit:

1 **Insert a blank cassette into the recording VCR.**

2 **Turn on the playback VCR and insert a source cassette.**

3 **Locate the playback start point and select the playback pause mode on the playback VCR.**

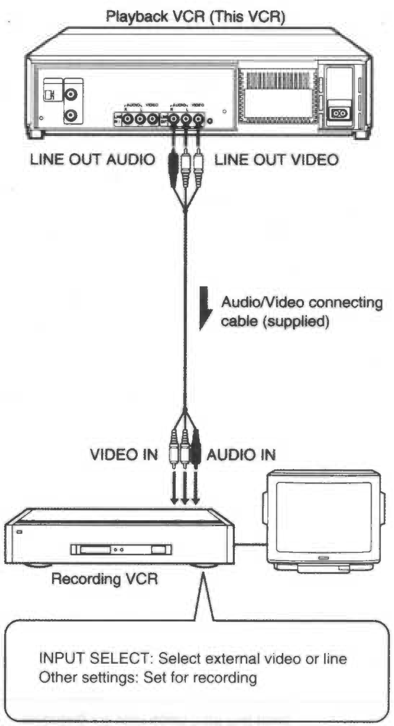
4 **Locate the recording start point and select the recording pause mode on the recording VCR.**

5 **Press II PAUSE on both VCRs.**
For best results, press II PAUSE on the playback VCR just before pressing II PAUSE on the recording VCR. When you've finished editing, press ■ STOP on both VCRs.

NOTES:
- If your playback VCR is a stereo unit, make connections with the supplied audio/video connecting cable.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN 2 AUDIO R.
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.

Editing onto Another VCR

Here's how to use this VCR as the playback VCR and another VCR as the recording VCR.



INPUT SELECT: Select external video or line
Other settings: Set for recording

Before you start:

- **Select EDIT position to light the EDIT indicator in the display window.**
  If your recording VCR has an editing function, it should also be selected to improve reception.
- **Press DATA SCREEN to delete the on-screen display.**

How to edit:

1 **Turn on the recording VCR and insert a blank cassette.**

2 **Insert a source cassette into the playback VCR.**

3 **Locate the playback start point and select the play back pause mode on the playback VCR.**

4 **Locate the recording start point and select the recording pause mode on the recording VCR.**

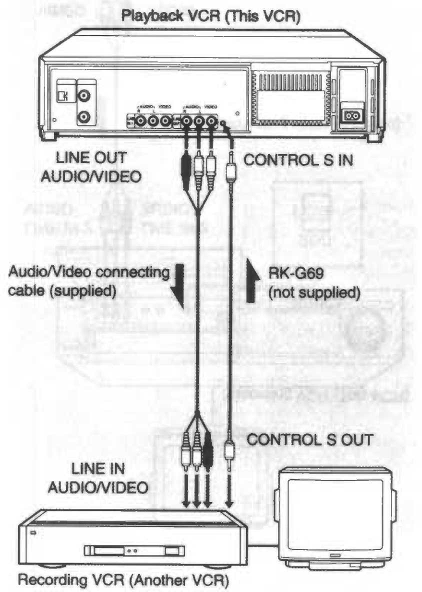
5 **Press II PAUSE on both VCRs.**
For best results, press II PAUSE on the playback VCR just before pressing II PAUSE on the recording VCR. When you've finished editing, press ■ STOP on both VCRs.

NOTES:
- If your recording VCR is a stereo unit, make connections with the supplied audio/video connecting cable.
- If your recording VCR is a monaural unit, make connections using the VMC-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.

Synchronized Editing onto Another VCR

Synchronized editing is the process of recording and editing a program from either a video camera recorder or a VCR to another VCR. Because this editing function involves one VCR controlling another VCR or video camera recorder, it is said to be "synchronized".

The following illustration shows you how to use this VCR for playback and either a Sony VHS VCR or certain 8mm VCRs having a Control S OUT terminal and synchro edit function for recording.



Before you start:
- Select external video or LINE on recording VCR.
- Make necessary settings for recording.

How to edit:

1 **Turn on the recording VCR and insert a blank cassette.**

2 **Insert a source cassette into the playback VCR.**

3 **Select EDIT position to light the EDIT indicator in the display window.**
If your recording VCR has an editing function, it should also be selected.

4 **Locate the edit start point and select the recording pause mode on the recording VCR.**

5 **Locate the playback start point and select the playback pause mode on the playback VCR.**

6 **Press SYNCHRO EDIT on the recording VCR.**
Both recording and playback will start.

7 **At the desired edit end point, press SYNCHRO EDIT on the recording VCR.**
The recording VCR enters the recording pause mode and the playback VCR enters the playback pause mode.

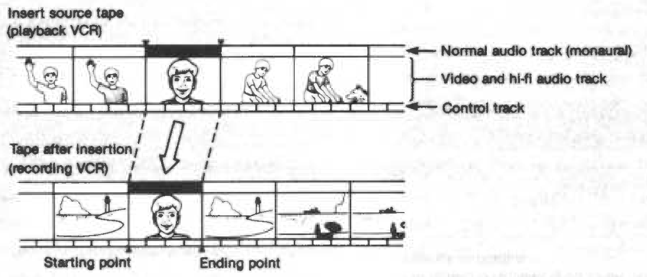
8 **To edit the next scene, repeat steps 5, 6, and 7.**
When you've finished editing, press ■ STOP on both VCRs.

NOTES:
- If your recording VCR is a monaural unit, make connections using the VMC-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.

Insert Editing (for SLV-696HF only)

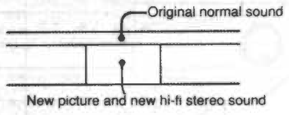
When you want to replace one prerecorded scene (and its sound) with another, you can use your SLV-696HF's insert editing function. This function lets you make either video inserts, audio inserts, or both video and audio inserts.

How the Insert Editing Function Works


Insert source tape (playback VCR)
Normal audio track (monaural)
Video and hi-fi audio track
Control track
Tape after insertion (recording VCR)
Starting point
Ending point

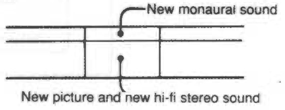
Video Insert

You can insert a new picture and hi-fi stereo sound from a video and hi-fi audio track onto a prerecorded cassette. Note that the original audio track is retained.


Original normal sound
New picture and new hi-fi stereo sound

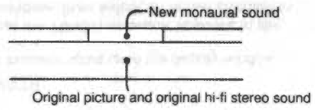
Video and Audio Insert

You can insert a new picture, hi-fi stereo sound, and a new monaural sound onto a prerecorded cassette.


New monaural sound
New picture and new hi-fi stereo sound

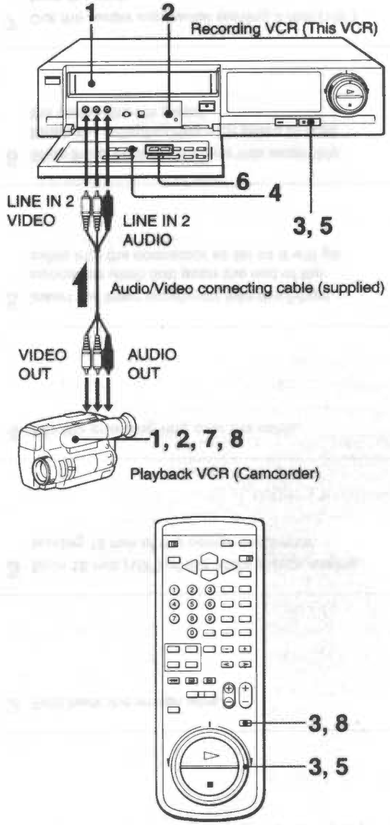
Audio Insert

You can insert a monaural soundtrack onto a prerecorded cassette. The picture and hi-fi stereo sound of the video and hi-fi audio track are retained.


New monaural sound
Original picture and original hi-fi stereo sound

Insert Editing from another VCR

Example: From an 8mm video camera recorder to this VCR.


1
2
Recording VCR (This VCR)
6
4
3, 5
LINE IN 2 VIDEO
LINE IN 2 AUDIO
Audio/Video connecting cable (supplied)
VIDEO OUT
AUDIO OUT
1, 2, 7, 8
Playback VCR (Camcorder)
3, 8
3, 5

Before you start:

- For connection, see pages 55 through 56. (The CONTROL S connections are not needed.)
- Select the insert source from the equipment connected to LINE IN 1 or 2.
- Connect the VCR to an audio system for "audio insert."

How to edit:

1 **Insert a source cassette into the playback VCR and a cassette for recording into this VCR.**

2 **Select EDIT position to light the EDIT indicator in the display window.**
If your playback VCR has an editing function, it should also be selected.

3 **On the recording VCR locate the edit end point, then press II PAUSE on this VCR.**

4 **Press COUNTER RESET on the recording VCR.**

5 **On the recording VCR, rewind the cassette to locate the starting point and set the VCR to the playback pause mode.**
The DUAL MODE SHUTTLE ring is useful for locating a desired starting point.

6 **Press VIDEO/AUDIO INSERT.**
For audio insert, press AUDIO. The "A INSERT" lights in the display window.
For video insert, press VIDEO. The "V INSERT" lights in the display window.
For audio and video insert, press the AUDIO and then VIDEO. The "AV INSERT" lights in the display window.

7 **On the playback VCR, locate the starting point where you want to start the insertion and set the VCR to the playback pause mode.**

8 **Press II PAUSE on both VCRs to start the insertion.**
At the ending point (0H00M00S), the insertion stops automatically. (To stop playback, press ■ STOP.)

To stop the insertion temporarily:
Press II PAUSE.

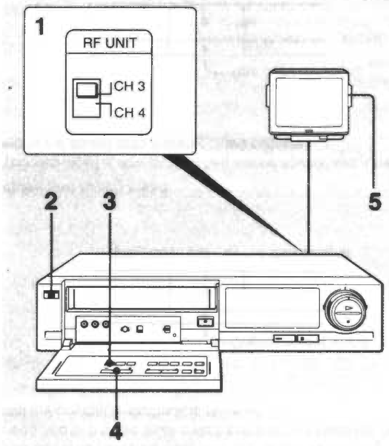
To stop ongoing insertion:
Press ■ STOP.

NOTES:

- The video/audio inserts cannot be made onto an unrecorded portion of a cassette.
- After the insertion, the previous picture and/or sound will be erased.

General Setup Information

Setting the RF Unit



Why this setting is necessary:

You must set the RF UNIT selector at the rear of the VCR properly so that your TV can receive the correct signal from the VCR. Set the selector to CH 3 (Ch 3) or CH 4 (Ch 4), whichever is not active in your area.

If you connect a TV or color monitor equipped with A/V input jacks, skip this adjustment.

1 **Set the RF UNIT at the rear of the VCR to CH 3 or CH 4, whichever is not active in your area.**

2 **Press POWER.**
The power indicator lights up in the display window.

3 **Press TV/VTR.**
The VTR indicator lights up in the display window.

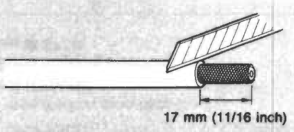
4 **Check that the TUNER indicator appears in the display window, then select an active channel in your area by pressing CHANNEL +/–.**

5 **Turn on your TV and set it to the channel you selected in step 1.**
Your TV is now tuned to the VCR. Whenever you use the VCR, set the TV to the preselected channel.

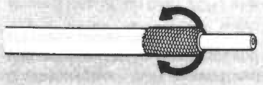
NOTE:
For details on adjusting TV channels, see your TV instruction manual.

Attaching the F-type Connector (not supplied)

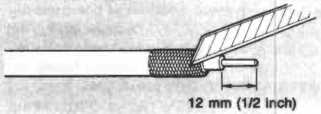
1 **Strip 17 mm (11/16") of the black polyvinyl jacket.**



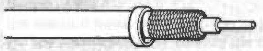
2 **Fold back the woven wire.**



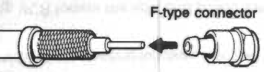
3 **Strip 12 mm (1/2") of the white plastic casing, leaving 12 mm of the center conductor.**



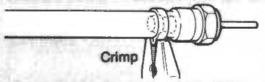
4 **Slip the crimping ring over the cable.**



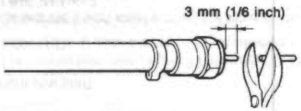
5 **Insert the inner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.**



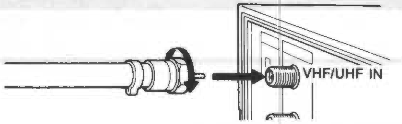
6 **Slide the crimping ring over this assembly. Pinch the crimping ring with pliers to hold the connection in place.**



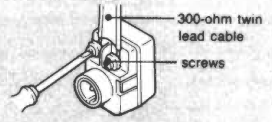
7 **Cut the center conductor leaving 3 mm (1/6") from the end.**



8 **Insert the F-type connector into VHF/UHF IN plug on the VCR.**

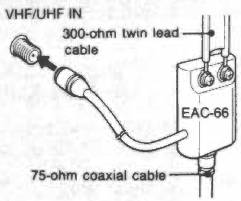


Attaching the External Antenna Connector (supplied)



1. Loosen the screws on the antenna connector.
2. Fit the 300-ohm twin lead cable on the UHF antenna under the screws on the antenna connector.
3. Retighten the screws.

Attaching the EAC66 U/V Band Separator / Mixer (not supplied)

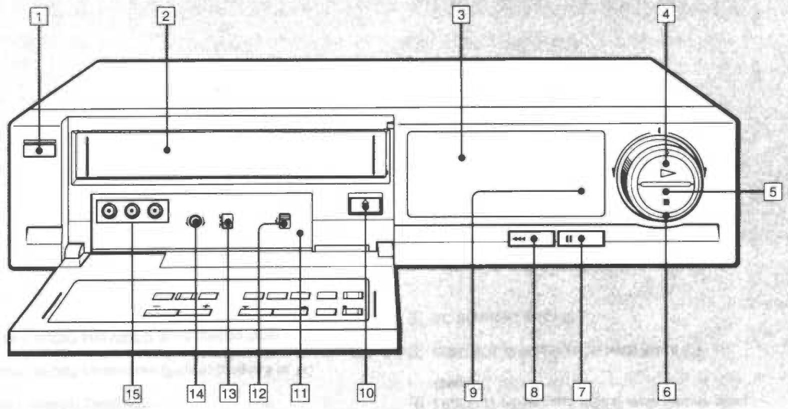


1. Loosen the screws on the U/V band separator/mixer.
2. Fit the 300-ohm twin lead cable on the UHF antenna under the screws.
3. Connect the 75-ohm coaxial cable to the U/V band separator/mixer.
4. Connect the U/V band separator/mixer to the VHF/UHF IN plug on the VCR.

Identifying the Parts and Controls

Refer to the pages indicated for details.

Front Panel

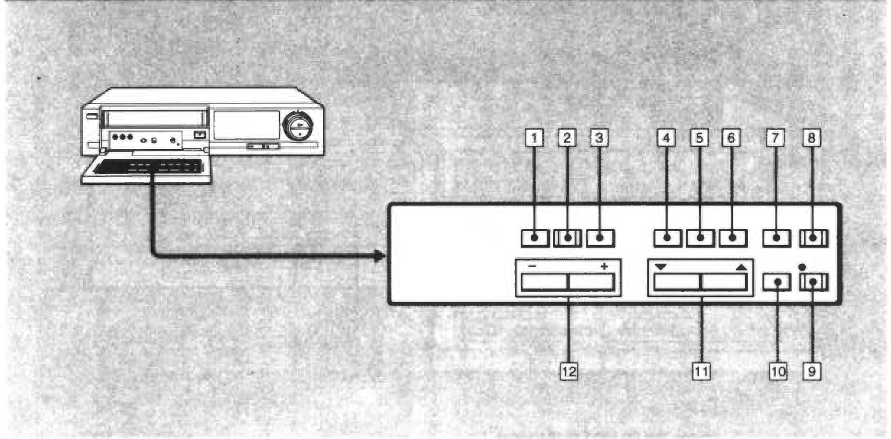


1 **POWER ON/OFF switch and indicator (page 60)**
2 **Cassette compartment**
3 **Display window and function mode display (page 66)**
4 **▷ PLAY button (page 29)**
5 **■ STOP button (page 29)**
6 **DUAL MODE SHUTTLE ring**
7 **II PAUSE button (page 47)**
8 **◀◀◀ HI-SPEED REWIND button (page 29)**
9 **Remote Sensor**
10 **≜ EJECT button (page 28)**
11 **CL (clear) button (page 70)**
12 **EDIT selector (page 55)**
13 **COMMAND MODE VTR1/VTR2/VTR3 selector (page 17)**
14 **SHARPNESS SOFT/SHARP control (page 29)**
15 **LINE IN 2 VIDEO and AUDIO jacks (phono type) (page 55)**

Identifying the Parts and Controls

Refer to the pages indicated for details.

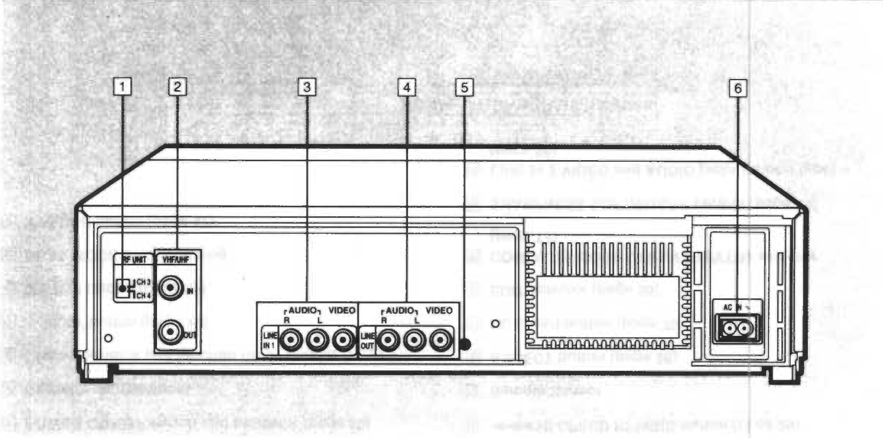
Inside of Front Panel


1
2
3
4
5
6
7
8
−
+
12
11
10
9

1. TV/VTR button (page 60)
2. INPUT SELECT button (page 33)
3. COUNTER RESET button (page 30)
4. VIDEO INSERT button (SLV-696HF only) (pages 58, 59)
5. AUDIO INSERT button (SLV-696HF only) (pages 58, 59)
6. TAPE SPEED (SP/EP) button (page 33)
7. QUICK TIMER button (page 53)
8. TIMER REC ON/OFF button (page 38)
9. REC button (page 33)
10. TRACKING AUTO/MANUAL button (page 31)
11. TRACKING NORMAL/SLOW and STILL ADJUST button (page 31)
12. CHANNEL +/− buttons (page 33)

Refer to the pages indicated for details.

Rear Panel

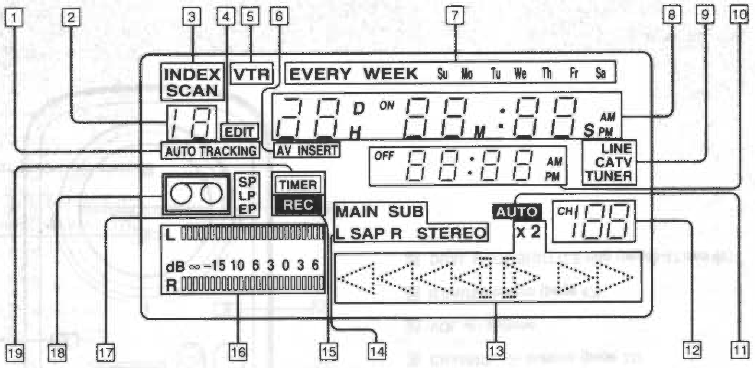

1
2
3
4
5
6
RF UNIT
CH3
CH4
VHF/UHF
IN
OUT
LINE IN 1
AUDIO
R
L
VIDEO
LINE OUT
AUDIO
R
L
VIDEO
AC IN

1. RF UNIT selector (page 60)
2. VHF/UHF IN/OUT connectors (F-type) (pages 8 to 14)
3. LINE IN 1 AUDIO and VIDEO jacks (phono type)
4. LINE OUT AUDIO and VIDEO jacks (phono type) (page 7)
5. CONTROL S IN jack (mini-type) (page 57)
6. AC IN socket (page 6)

Identifying the Parts and Controls

Refer to the pages indicated for details.

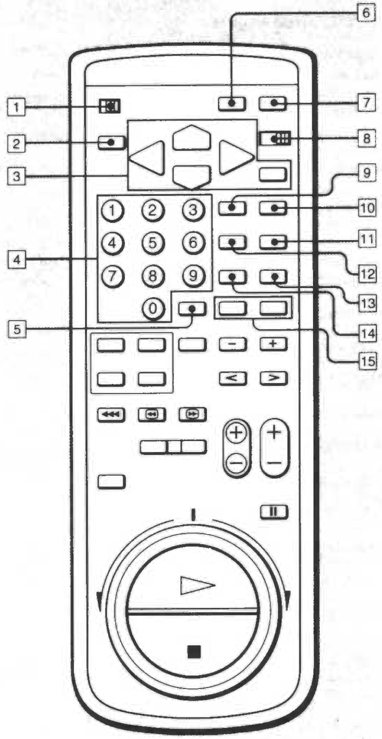
Display Window Indicators


1
2
3
4
5
6
7
8
9
10
INDEX SCAN
VTR
EVERY WEEK
Su Mo Tu We Th Fr Sa
D ON
H
M
AM
S PM
EDIT
AUTO TRACKING
AV INSERT
OFF
AM
PM
LINE
CATV
TUNER
SP
LP
EP
TIMER
REC
MAIN SUB
L SAP R STEREO
AUTO
X 2
CH
L
dB ∞ -15 10 6 3 0 3 6
R
19
18
17
16
15
14
13
12
11

1. AUTO TRACKING indicator (page 31)
2. Index number and timer program number for VCR Plus+ indicator (page 50)
3. INDEX, INDEX SCAN indicator (pages 49, 50)
4. EDIT indicator (page 55)
5. VTR indicator (page 33)
6. AV INSERT indicator (SLV-696HF only) (page 59)
   "A INSERT" lights for audio insert.
   "V INSERT" lights for video insert.
   "AV INSERT" lights for audio and video insert.
7. Day of the week indicator, EVERY WEEK indicator for timer-activated recording (page 38)
8. Linear time counter (page 30)
9. Input mode indicator
10. Quick-timer recording time/current time (page 53)
11. AUTO indicator (page 29)
12. Channel Number/Input Mode indicator
13. Tape Operation indicator (page 29)
14. Stereo Program/SAP indicator (page 35)
15. REC (recording) indicator
16. Peak Level Meter
17. Tape Speed indicator (LP is for playback only).
18. Cassette indicator (page 28)
19. TIMER indicator

Refer to the pages indicated for details.

Remote Commander

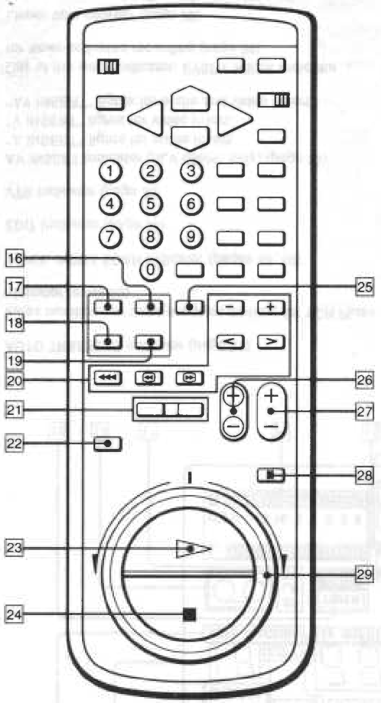

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

1. TV/VTR Remote Control selector (page 17)
2. MENU button
3. EXECUTE button and Cursor Shift ▲/▼/◄/► buttons
4. Channel Number buttons (page 33)
5. ENTER button
6. TV/VTR (Antenna TV/VTR) button (page 34)
7. POWER switch (page 60)
8. COMMAND MODE 1/2/3 selector (page 17)
9. TIMER CLEAR button (page 41)
10. TIMER REC ON/OFF button (page 38)
11. INPUT SELECT button (page 33)
12. TAPE SPEED button (page 33)
13. DATA SCREEN button (page 30)
14. INDEX button (page 50)
15. INDEX MARK/ERASE buttons (pages 49, 52)

Identifying the Parts and Controls

Refer to the pages indicated for details.

Remote Commander



16 **ONCE button (page 45)**

17 **VCR Plus+ button (page 45)**

18 **DAILY button (page 45)**

19 **WEEKLY button (page 45)**

20 **Tape Transport buttons (pages 29, 47 to 48)**
SLOW
(pressing + increases the speed; – decreases the speed)
FRAME
(frame-by-frame picture and cassette direction for slow motion playback;
⊵ forward
⊴ reverse
◀◀◀ HI-SPEED REWIND
⊖⊕ SEARCH (reverse/forward)

21 **REC buttons (Press the two buttons simultaneously) (page 33)**

22 **SKIP button (page 48)**

23 **▷ PLAY button (page 29)**

24 **■ STOP button (page 29)**

25 **AUDIO MONITOR button (page 32)**

26 **CHANNEL +/– buttons (page 33)**

27 **VOL +/– buttons**

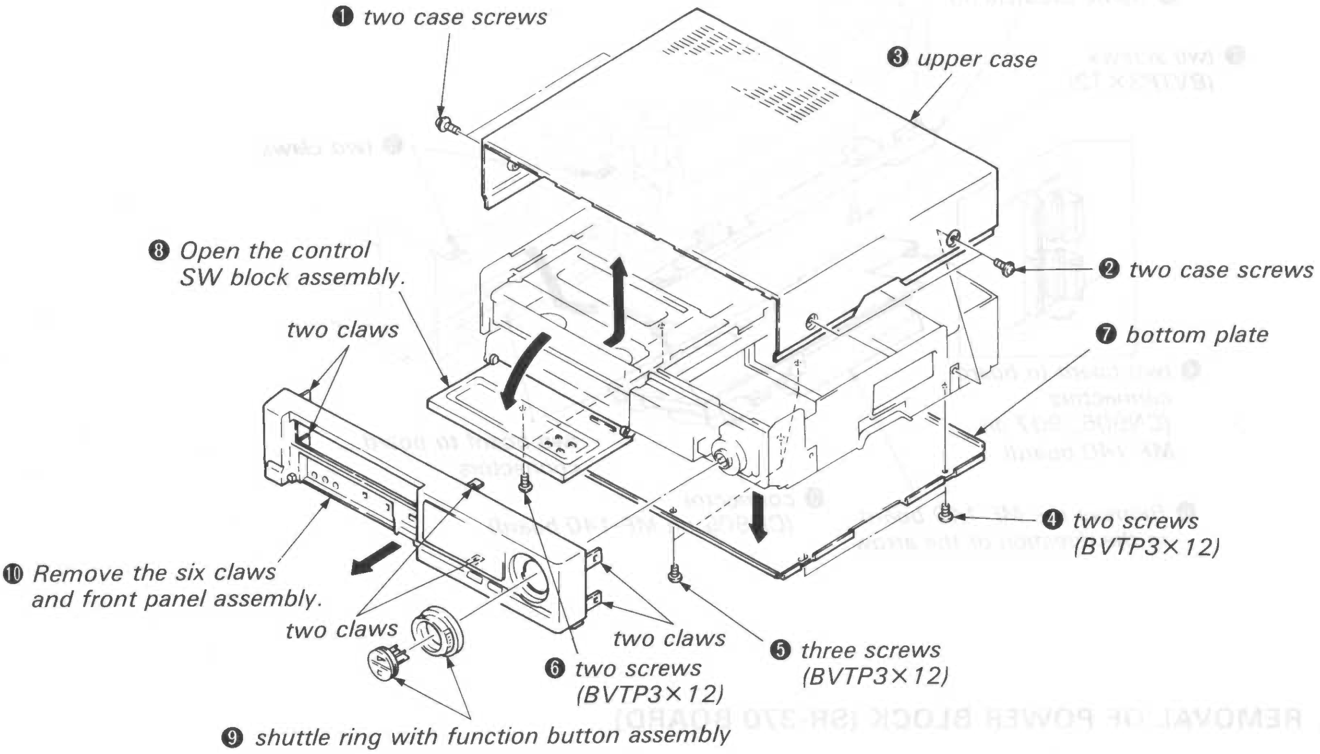
28 **II PAUSE button (page 47)**

29 **DUAL MODE SHUTTLE ring (pages 47 and 48)**

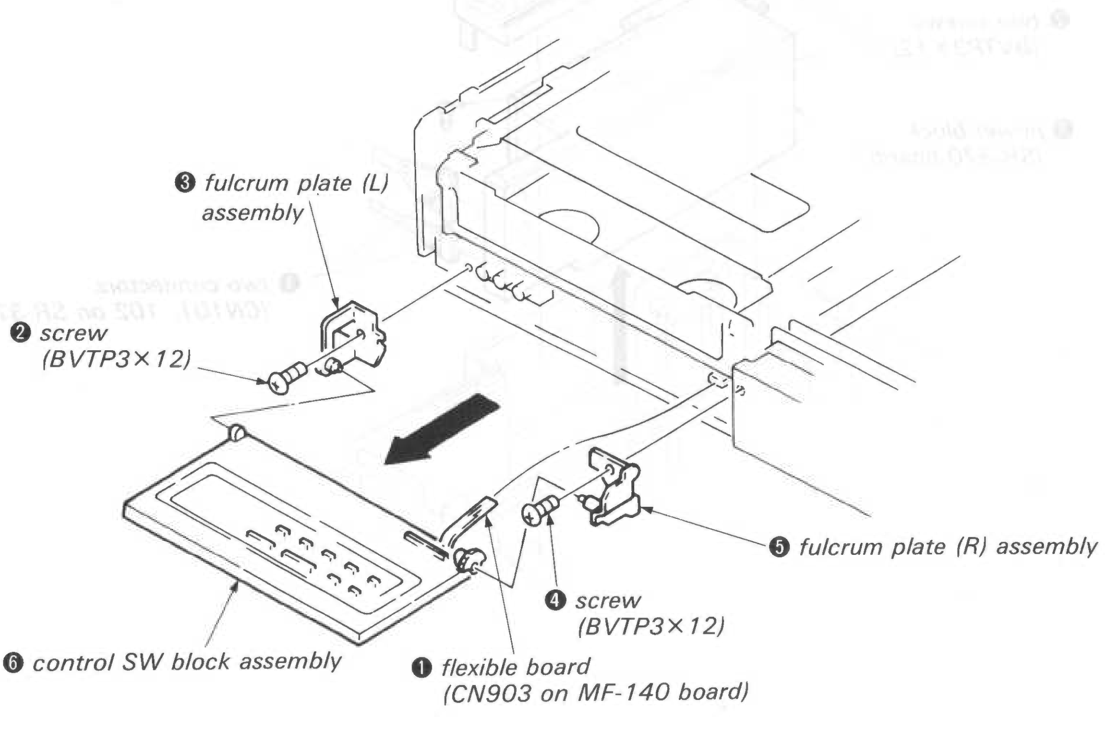
SECTION 2
DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

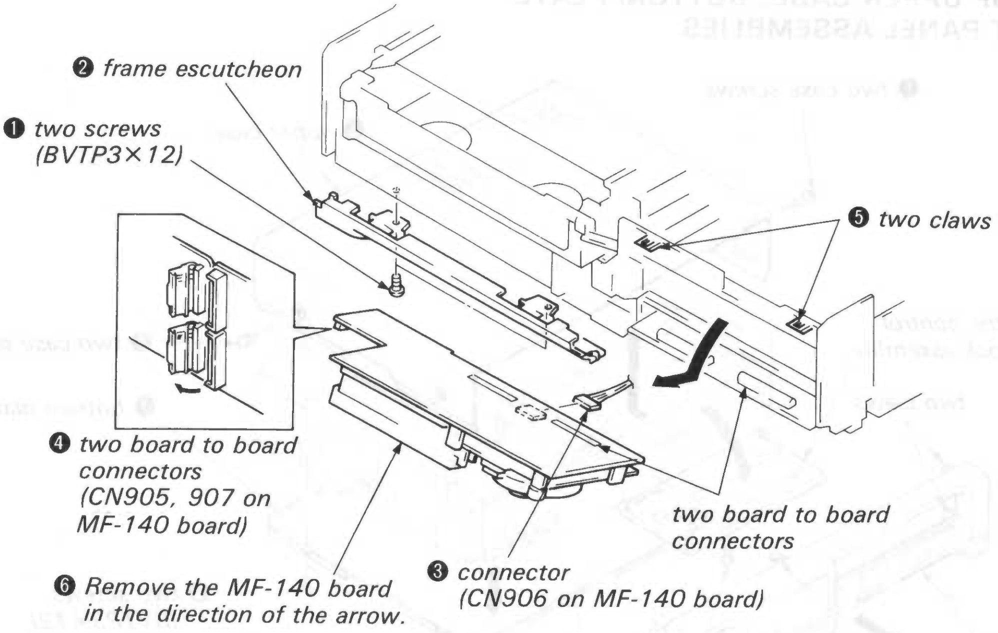
2-1. REMOVAL OF UPPER CASE, BOTTOM PLATE AND FRONT PANEL ASSEMBLIES


❶ two case screws
❸ upper case
❽ Open the control SW block assembly.
two claws
❷ two case screws
❼ bottom plate
❹ two screws (BVTP3×12)
❿ Remove the six claws and front panel assembly.
two claws
two claws
❻ two screws (BVTP3×12)
❺ three screws (BVTP3×12)
❾ shuttle ring with function button assembly

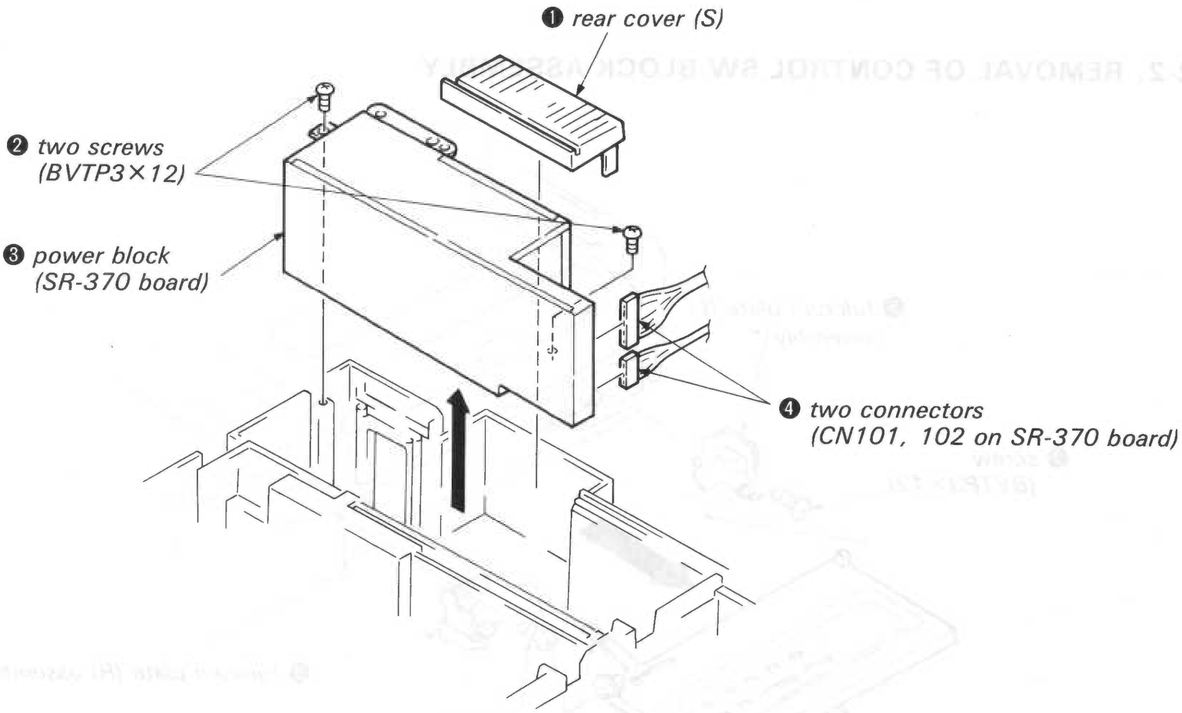
2-2. REMOVAL OF CONTROL SW BLOCK ASSEMBLY


❸ fulcrum plate (L) assembly
❷ screw (BVTP3×12)
❺ fulcrum plate (R) assembly
❹ screw (BVTP3×12)
❻ control SW block assembly
❶ flexible board (CN903 on MF-140 board)

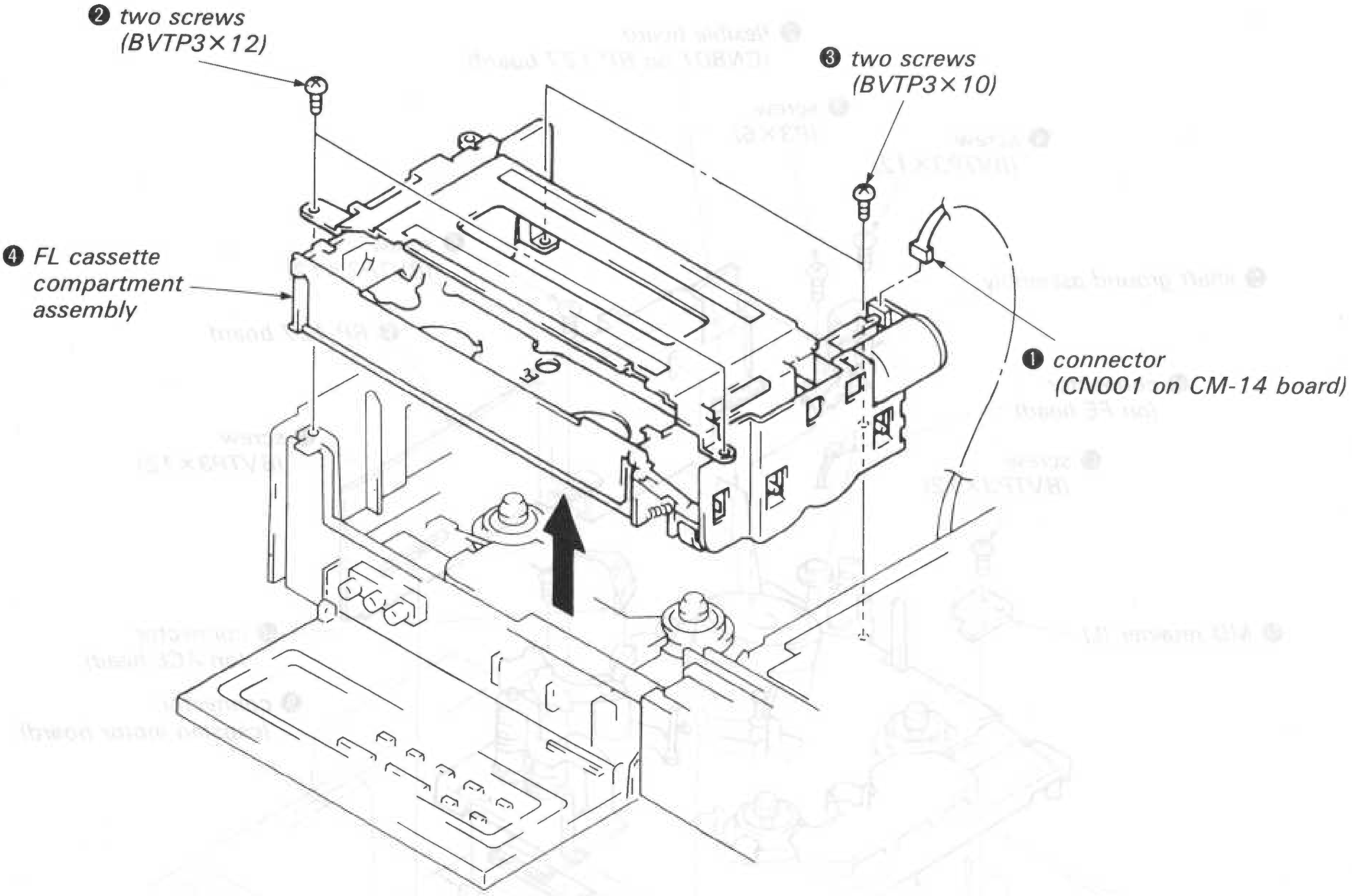
2-3. REMOVAL OF MF-140 BOARD


❷ frame escutcheon
❶ two screws (BVTP3×12)
❺ two claws
❹ two board to board connectors (CN905, 907 on MF-140 board)
two board to board connectors
❸ connector (CN906 on MF-140 board)
❻ Remove the MF-140 board in the direction of the arrow.

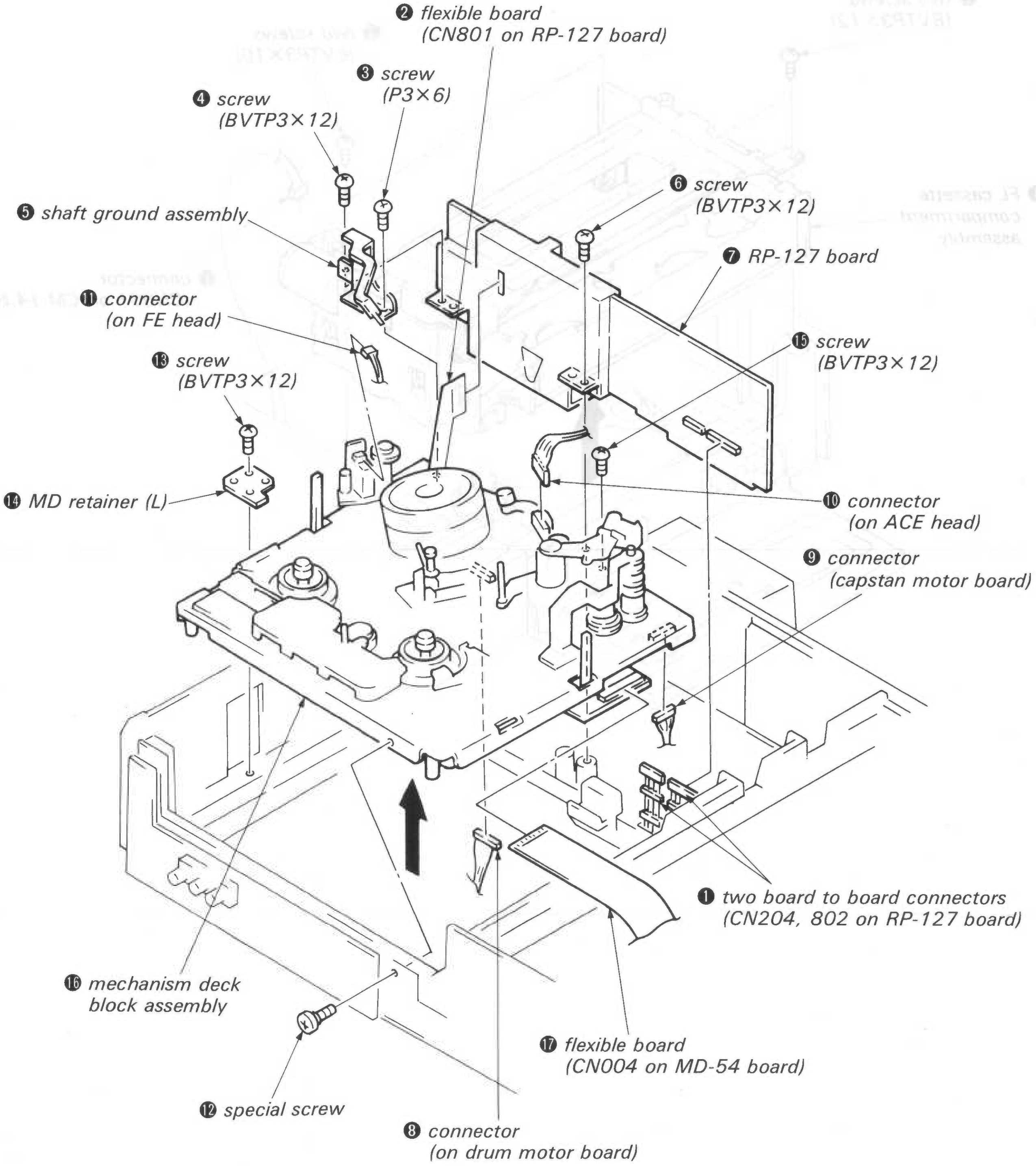
2-4. REMOVAL OF POWER BLOCK (SR-370 BOARD)


❶ rear cover (S)
❷ two screws (BVTP3×12)
❸ power block (SR-370 board)
❹ two connectors (CN101, 102 on SR-370 board)

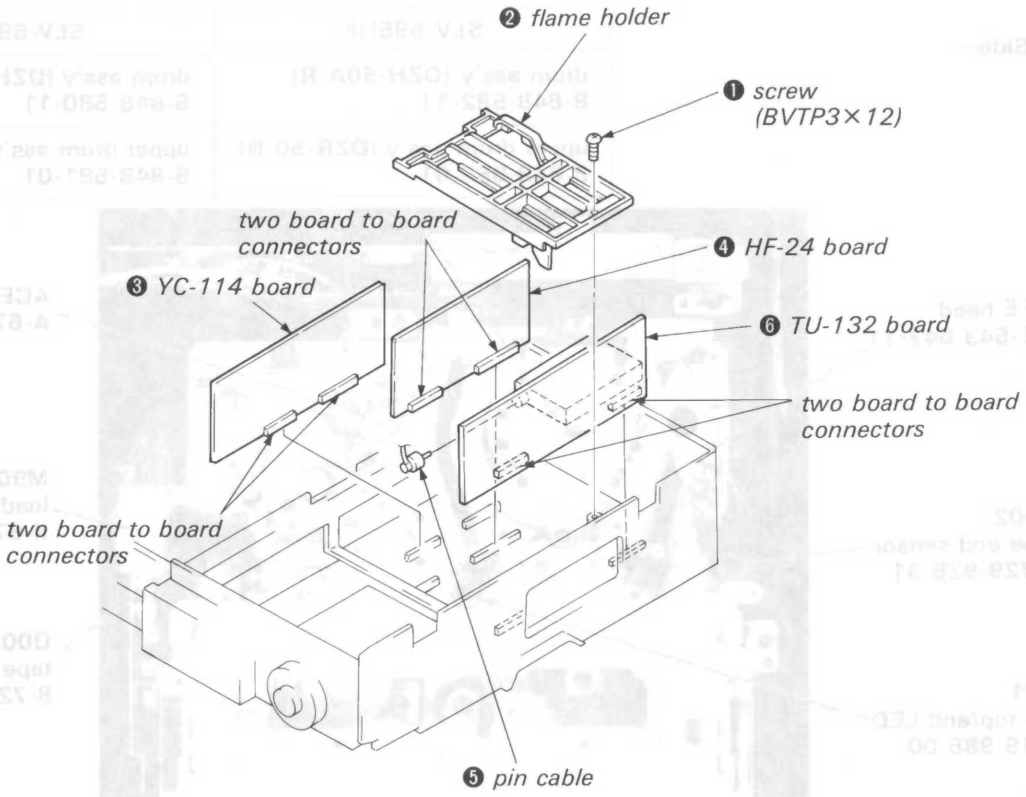
2-5. REMOVAL OF FL CASSETTE COMPARTMENT ASSEMBLY


❷ two screws (BVTP3×12)
❸ two screws (BVTP3×10)
❹ FL cassette compartment assembly
❶ connector (CN001 on CM-14 board)

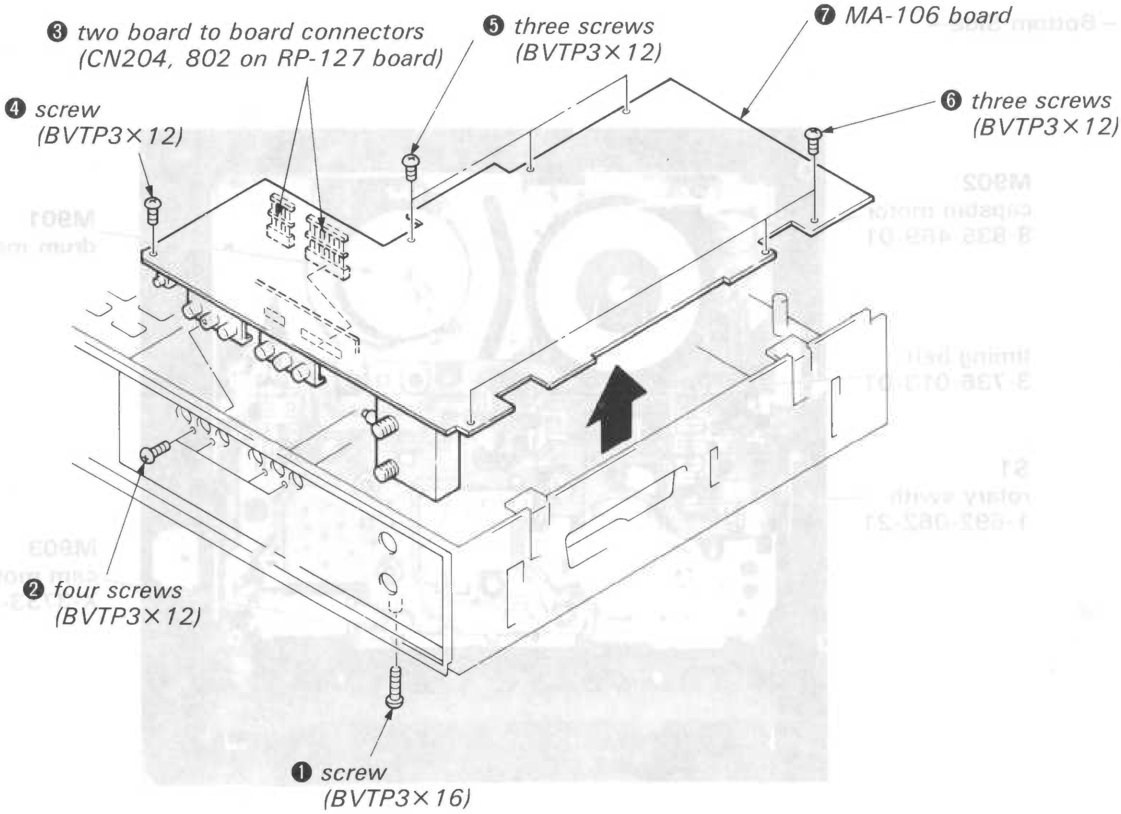
2-6. REMOVAL OF RP-127 BOARD AND MECHANISM DECK BLOCK ASSEMBLY


❷ flexible board
(CN801 on RP-127 board)
❸ screw
(P3×6)
❹ screw
(BVTP3×12)
❺ shaft ground assembly
❻ screw
(BVTP3×12)
❼ RP-127 board
⓫ connector
(on FE head)
⓭ screw
(BVTP3×12)
⓯ screw
(BVTP3×12)
⓮ MD retainer (L)
❿ connector
(on ACE head)
❾ connector
(capstan motor board)
❶ two board to board connectors
(CN204, 802 on RP-127 board)
⓰ mechanism deck
block assembly
⓱ flexible board
(CN004 on MD-54 board)
⓬ special screw
❽ connector
(on drum motor board)

2-7. REMOVAL OF HF-24, TU-132 AND YC-114 BOARDS


❷ flame holder
❶ screw (BVTP3×12)
two board to board connectors
❹ HF-24 board
❸ YC-114 board
❻ TU-132 board
two board to board connectors
two board to board connectors
❺ pin cable

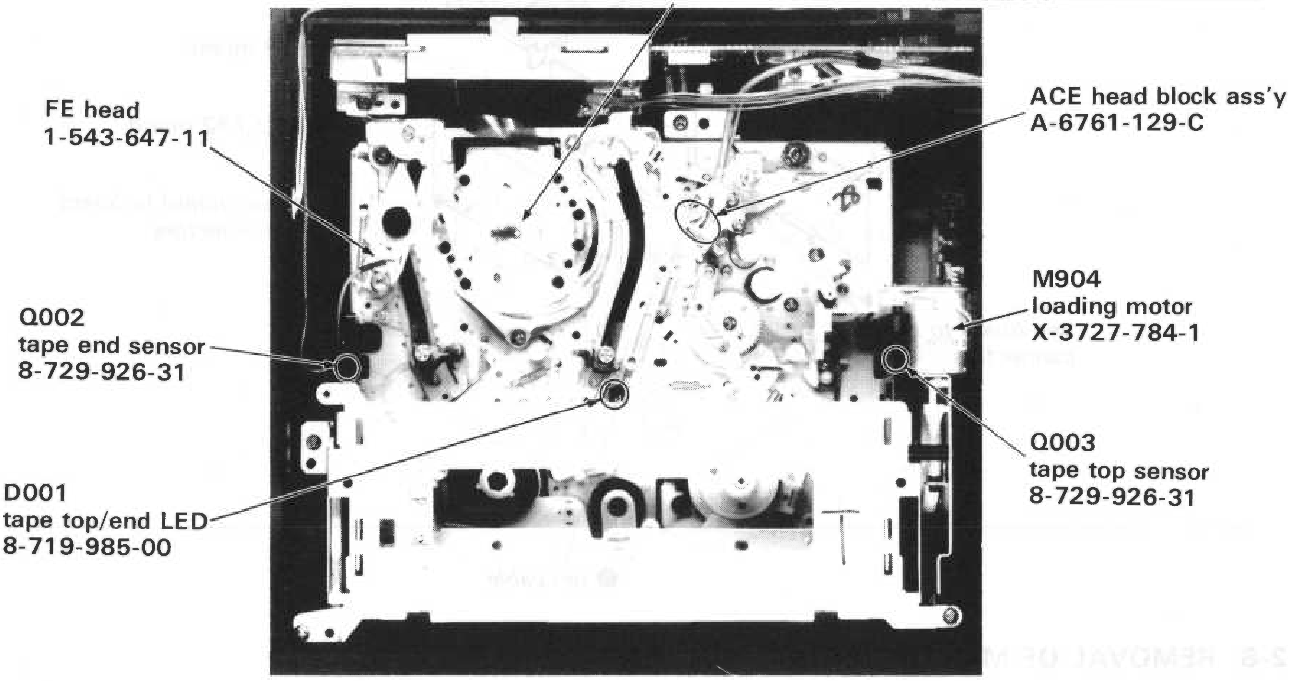
2-8. REMOVAL OF MA-106 BOARD


❸ two board to board connectors (CN204, 802 on RP-127 board)
❺ three screws (BVTP3×12)
❼ MA-106 board
❹ screw (BVTP3×12)
❻ three screws (BVTP3×12)
❷ four screws (BVTP3×12)
❶ screw (BVTP3×16)

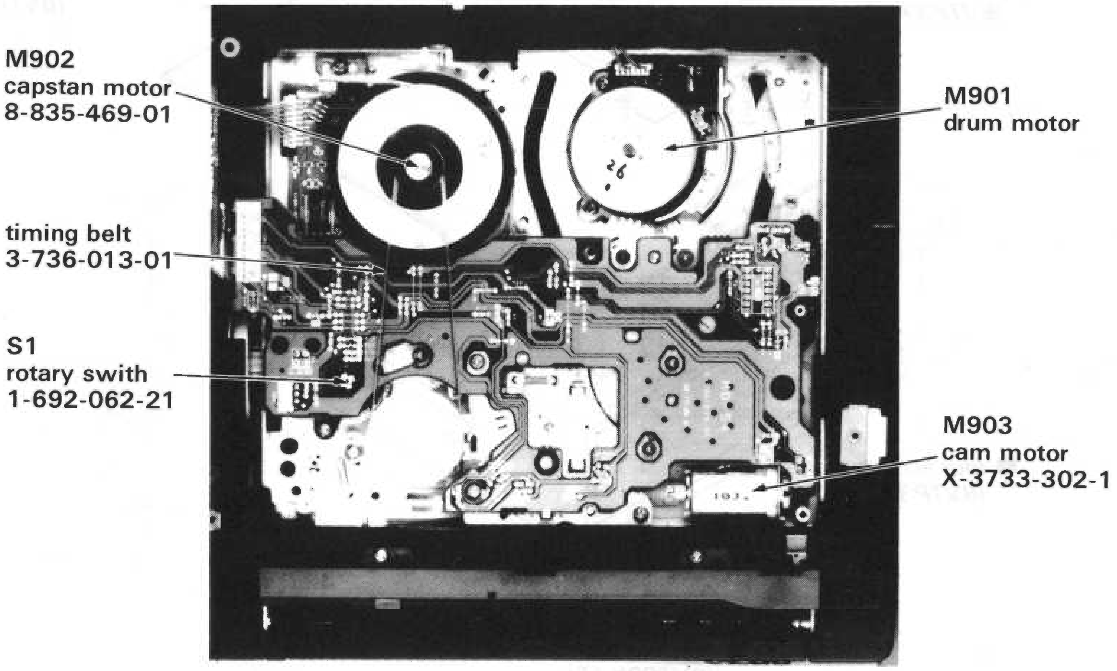
2-9. INTERNAL VIEWS

—Top Side—

SLV-595HF	SLV-696HF
drum ass'y (DZH-50A-R) 8-848-582-11	drum ass'y (DZH-49A-R) 8-848-580-11
upper drum ass'y (DZR-50-R) 8-848-583-01	upper drum ass'y (DZR-49-R) 8-848-581-01

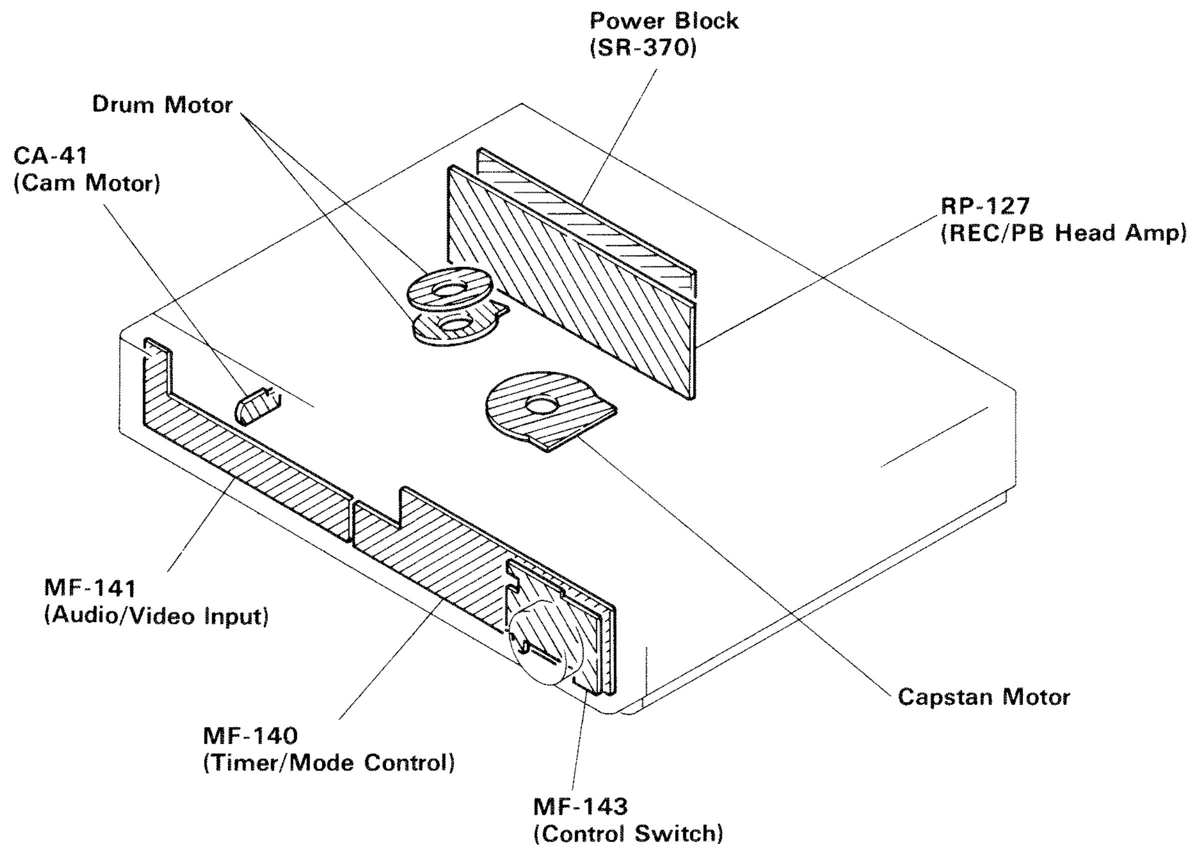

FE head
1-543-647-11
Q002
tape end sensor
8-729-926-31
D001
tape top/end LED
8-719-985-00
ACE head block ass'y
A-6761-129-C
M904
loading motor
X-3727-784-1
Q003
tape top sensor
8-729-926-31

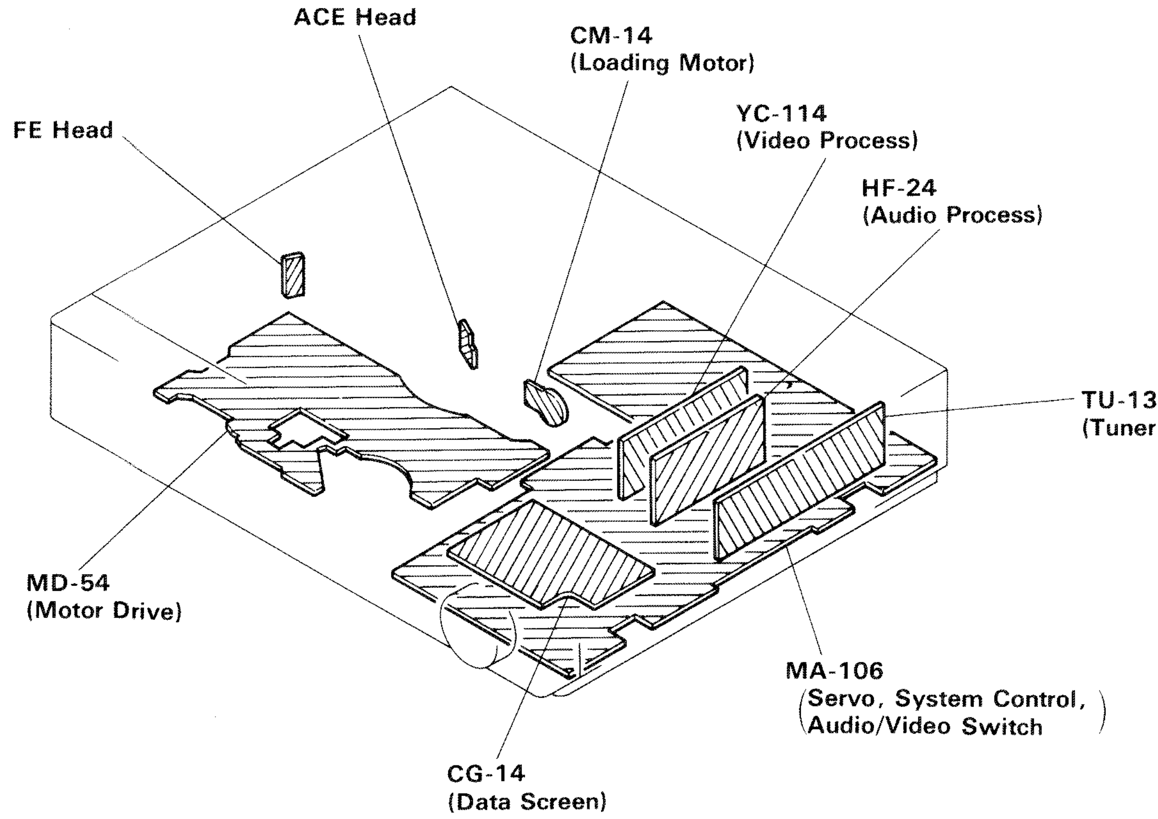
—Bottom Side—


M902
capstan motor
8-835-469-01
timing belt
3-736-013-01
S1
rotary swith
1-692-062-21
M901
drum motor
M903
cam motor
X-3733-302-1

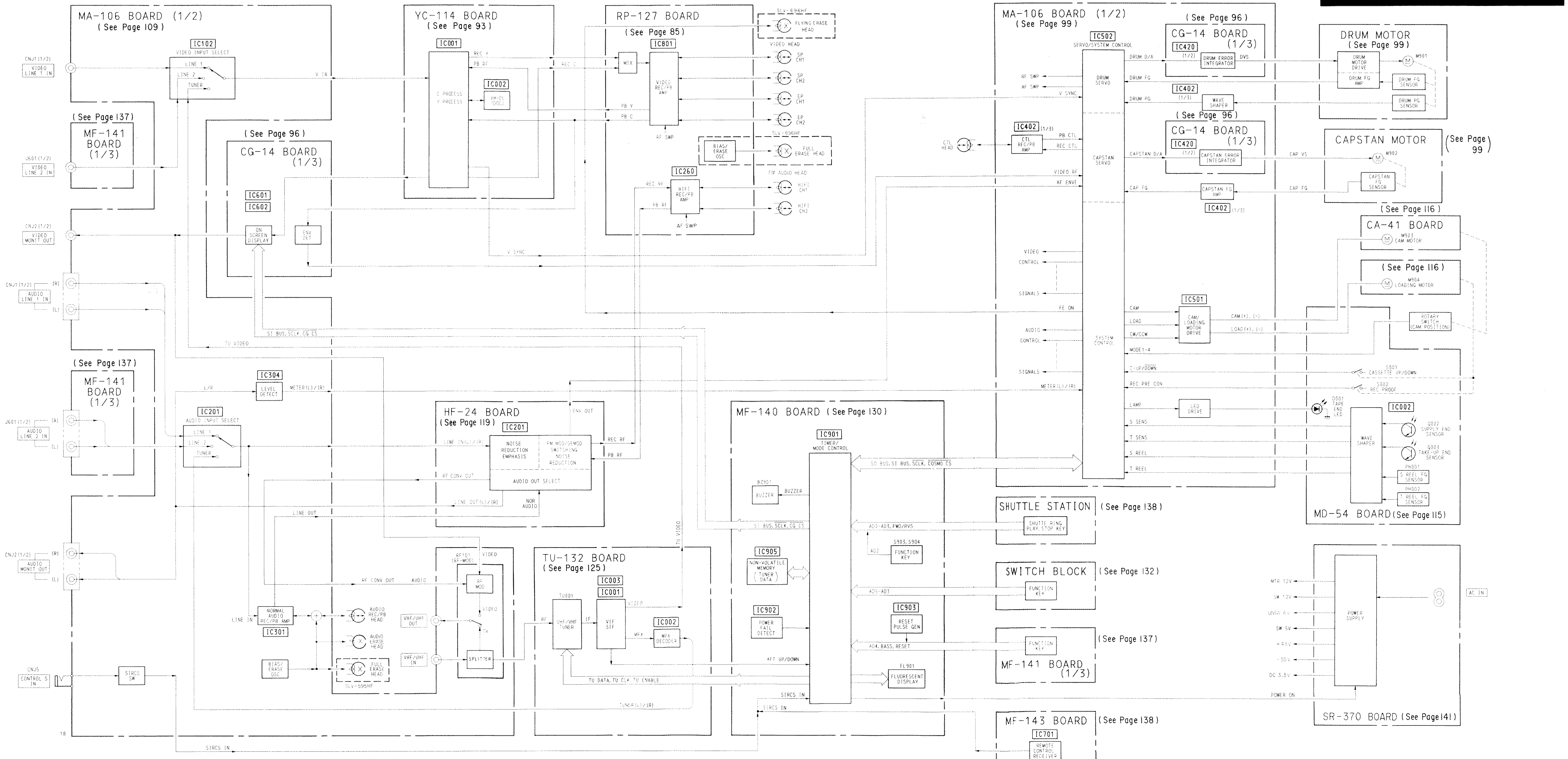
SECTION 3
DIAGRAMS

3.1 CIRCUIT BOARDS LOCATION


Power Block
(SR-370)
Drum Motor
CA-41
(Cam Motor)
RP-127
(REC/PB Head Amp)
MF-141
(Audio/Video Input)
MF-140
(Timer/Mode Control)
MF-143
(Control Switch)
Capstan Motor


ACE Head
CM-14
(Loading Motor)
YC-114
(Video Process)
FE Head
HF-24
(Audio Process)
TU-132
(Tuner)
MD-54
(Motor Drive)
MA-106
(Servo, System Control,
Audio/Video Switch
CG-14
(Data Screen)

3-2. OVERALL BLOCK DIAGRAM


MA-106 BOARD (1/2)
(See Page 109)
IC102
VIDEO INPUT SELECT
TUNER
(See Page 137)
MF-141
BOARD
(1/3)
(See Page 96)
CG-14 BOARD
(1/3)
IC601
IC602
ON SCREEN DISPLAY
YC-114 BOARD
(See Page 93)
IC001
IC002
RP-127 BOARD
(See Page 85)
IC801
IC260
FLYING ERASE HEAD
SP CH1
SP CH2
EP CH1
EP CH2
HIFI CH1
HIFI CH2
FULL ERASE HEAD
MA-106 BOARD (1/2)
(See Page 99)
IC502
SERVO/SYSTEM CONTROL
IC402
CG-14 BOARD
(1/3)
IC420
DRUM ERROR INTEGRATOR
DRUM MOTOR
(See Page 99)
CAPSTAN MOTOR
(See Page 99)
CTL HEAD
CAPSTAN ERROR INTEGRATOR
(See Page 116)
CA-41 BOARD
(See Page 116)
LOADING MOTOR
IC501
CAM/LOADING MOTOR DRIVE
IC304
LEVEL DETECT
IC201
AUDIO INPUT SELECT
HF-24 BOARD
(See Page 119)
IC201
NOISE REDUCTION EMPHASIS
AUDIO OUT SELECT
MF-140 BOARD (See Page 130)
IC901
TIMER/MODE CONTROL
BUZZER
IC905
NON-VOLATILE MEMORY
IC902
POWER FAIL DETECT
IC903
RESET PULSE GEN
FL901
FLUORESCENT DISPLAY
SHUTTLE STATION (See Page 138)
SHUTTLE RING PLAY, STOP KEY
SWITCH BLOCK (See Page 132)
FUNCTION KEY
MF-141 BOARD
(1/3)
(See Page 137)
MF-143 BOARD (See Page 138)
IC701
REMOTE CONTROL RECEIVER
TU-132 BOARD
(See Page 125)
IC003
IC001
IC002
VHF/UHF TUNER
VIF SIF
MTS DECODER
NORMAL AUDIO REC/PB AMP
IC301
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
BIAS/ERASE OSC
RF MOD
SPLITTER
IC002
WAVE SHAPER
MD-54 BOARD (See Page 115)
SR-370 BOARD (See Page 141)
POWER SUPPLY
AC IN
LINE 1 IN
LINE 2 IN
VIDEO MONIT OUT
AUDIO MONIT OUT
CONTROL S IN
VHF/UHF IN
VHF/UHF OUT

3-3. VIDEO BLOCK DIAGRAM

RP-127 BOARD (1/3) (See Page 85)
IC801
VIDEO HEAD
SP CH 1
SP CH 2
EP CH 1
EP CH 2
FLYING ERASE HEAD
SLV-696HF
BUFFER
RF AGC
AGC DET
COMP
MODE CONTROL LOGIC
TO EACH SWITCHES
DET
CHECK PIN
(See Page 99)
MA-106 BOARD (1/9)
YC-114 BOARD (1/2) (See Page 93)
IC001 (1/2) Y PROCESS
IC001 (2/2) CHROMA PROCESS
FM AGC
HPF
LIM
LPF
MIX
FM DEMOD
MAIN DE-EMPH
DROP OUT DETECT
WHITE/DARK CLIP
MAIN EMPHASIS
NON-LINEAR EMPHASIS
DETAIL ENHANCER
FM MOD
1/2fH CARRIER SHIFT
SP/EP DET
VCA
CLAMP
CORRELATION DET
NON LINEAR DE-EMPHASIS
NOISE CANCEL
PICTURE CONTROL
EDIT DET
Y/C MIX
MUTE VD INSERT
VIDEO AMP
AGC DET
SYNC SEP
DELAY
COMB FILTER
1H DELAY
PB KILL BURST DEEMPHASIS
BURST GATE
ACC AMP
ACC DET
BURST EMPHASIS
MAIN CONV
PHASE SHIFT
SIDE LOCK DET
KIL DET ID DET
PB APC DET
REC APC DET
4.21MHz BPF
1/8
1/128
1/320
HALF H KILLER
TRAP
SERVO/SYSTEM CONTROL (MA-106)
MA-106 BOARD (1/9) (See Page 109)
CG-14 BOARD (1/4) (See Page 96)
IC602 ON SCREEN DISPLAY
IC601
AFC
DIVID
BACK GROUND VIDEO GEN
CHARACTER MIX
CHARACTER GENERATOR
SYNC SEP
H SYNC SEP
V SYNC SEP
7MHz OSC
BUFFER
MUTE
VIDEO OUT
TIMER/MODE CONTROL (MF-140)
TUNER VIDEO (RF601)
TU VIDEO IN
TUNER (TU-193)
IC102
TUNER
LINE 1
LINE 2
VIDEO LINE 1 IN
VIDEO LINE 2 IN
J601 (1/2) VIDEO LINE IN 2
RV601 SHARPNESS
(See Page 131) MF-140 BOARD (1/4)
(See Page 137) MF-141 BOARD (1/4)
CS H DET

3-4. SYSTEM CONTROL–VIDEO BLOCK INTERFACE

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB・PAUSE	SLOW	×2	CUE	REVIEW	REC	REC・PAUSE
V・PB	MA106 Board IC502(95)	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	MA106 Board IC502(85)	O	L	L	L	L	HI-Z (2.5V)	∗1	∗10	∗5	∗5	L	L
RF SW P (SW30)	MA106 Board IC502①	O	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2
Q VD/V MUTE	MA106 Board IC502②	O	L	L	L	∗3	∗4	∗4	∗4	∗4	∗4	L	L
RP PB	MA106 Board IC502(97)	O	H	H	H	H	H	H	H	H	H	L	L
SP	MA106 Board IC502(91)	O	∗6	∗6	∗6	∗7	∗7	∗7	∗7	∗7	∗7	∗6	∗6
EP	MA106 Board IC502(92)	O	∗6	∗6	∗6	∗7	∗7	∗7	∗7	∗7	∗7	∗6	∗6
LP	MA106 Board IC502(93)	O	L	L	L	∗7	∗7	∗7	∗7	∗7	∗7	L	L
REC・P	MA106 Board IC502⑤	O	L	L	L	L	L	L	L	L	L	L	H
REC	MA106 Board IC502(98)	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	MA106 Board IC502(66)	I	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8
OSD MUTE	MA106 Board IC502(71)	O	∗9	∗9	∗9	∗9	∗9	∗9	∗9	∗9	∗9	∗9	∗9
EDIT	MA106 Board IC502(94)	O	∗11	∗11	∗11	∗11	∗11	∗11	∗11	∗11	∗11	∗11	∗11

∗1. Foward slow mode: "HI-Z (2.5V)" in tape stop, "L" in tape running (approx. 40 msec).
Reverse slow mode: "HI-Z (2.5V)" in tape stop, "H" in tape running SP mode (apporox. 40 msec).
"L" in tape running EP mode (approx. 40 msec).

∗2. Synchronized with drum rotation. 30 Hz 50% duty pulse.

∗3. Normally "L" . "H" when CTL signal is not generated.

∗4. V period "H" pulse.

∗5. "H" in SP mode. "L" in EP mode.

∗6. Selected by SP/EP. SP mode: "L", EP mode: "H".

∗7. Selected by tape recording mode.

Mode / Signal	SP	LP	EP
SP(91)	L	H	H
EP(92)	L	L	H
LP(93)	L	H	L

∗8. Composite sync signal (positive).

∗9. "L" when menu screen or blue back screen.

∗10. "HI-Z (2.5V)" in EP mode. "H" in SP mode.

∗11. Normally "L". "H" in edit mode.

3-5. SYSTEM CONTROL–SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	Pin. No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB・PAUSE	SLOW	×2	CUE	REVIEW	REC	REC・PAUSE	PB INDEX WRT/ERS
REC CTL	MA106 Board IC502⑦	O	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	
CAP STOP	MA106 Board IC502㊳	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	∗3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	MA106 Board IC502㉔	O	L	L	L	L	L	L	L	∗2	L	L	L	L	L	
CTC REC	MA106 Board IC502㉘	O	L	L	L	L	L	L	L	L	L	L	L	H	H	H
INDEX	MA106 Board IC502㉚	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	MA106 Board IC502(67)	I	H	∗6	∗6			∗1	H/L	∗2	∗6	∗6	∗6	∗1	H	
VD CTL	MA106 Board IC502(77)	I	H	∗6	∗6			∗1	H/L	∗2	∗6	∗6	∗6	∗1	H	
DRUM PG	MA106 Board IC502(68)	I	∗4	∗7	∗7	∗5	∗5	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	
DRUM FG	MA106 Board IC502(69)	I	∗4	∗8	∗8	∗5	∗5	∗8	∗8	∗8	∗8	∗8	∗8	∗8	∗8	
CAP FG	MA106 Board IC502(70)	I	H/L	∗6	∗6	∗5	∗5	∗6	H/L	∗9	∗6	∗6	∗6	∗6	H/L	
CAP RVS	MA106 Board IC502(72)	O	H/L	L	H	L	H	L	L	∗2	L	L	H	L	L	
CAP DA	MA106 Board IC502(73)	O	∗10	∗10	∗10	∗10	∗10	∗11	∗10	∗10	∗11	∗11	∗11	∗11	∗10	
DRUM DA	MA106 Board IC502(74)	O	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	∗12	
CTL STEP	MA106 Board IC502㉙	O	L	L	L	L	L	L	L	∗13	L	L	L	L	L	

∗1. 30 Hz pulse.

∗2. Pulse at tape running.

∗3. Reverse logic pulse of STEP PLS.

∗4. "L" when drum rotation stop.

∗5. Unstable period pulse.

∗6. Pulse of period in proportion to tape speed.

∗7. 30 Hz "H" pulse.

∗8. 360 Hz pulse.

∗9. Pulse at tape running.

∗10. Approx. 2 msec period "H" or "L" pulse.

∗11. Approx. 1.5 msec period "H" or "L" pulse.

∗12. Approx. 3 msec period "H" or "L" pulse.

∗13. "H" when FWD direction and STEP drive.

3-6. SYSTEM CONTROL–MECHANISM BLOCK INTERFACE

Signal	Pin. No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB・PAUSE	SLOW	×2	CUE	REVIEW	REC	REC・PAUSE
CAM ∗1	MA106 Board IC502⑫	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA106 Board IC502⑭	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA106 Board IC502⑬	O			H	L	H	L											
MODE 1	MA106 Board IC502(58)	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA106 Board IC502(57)	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA106 Board IC502(56)	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA106 Board IC502(55)	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA106 Board IC502⑮	I	∗2	L	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2
C-UP/DOWN	MA106 Board IC502⑯	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	MA106 Board IC502(64)	I	∗3	H/L	H/L	H/L	H/L	H/L	H/L	∗3	∗3	∗3	H/L	∗3	∗3	∗3	∗3	∗3	H/L
S REEL	MA106 Board IC502(63)	I	∗3	H/L	H/L	H/L	∗3	∗3	H/L	∗3	∗3	∗3	H/L	∗3	∗3	∗3	∗3	∗3	H/L
END LED	MA106 Board IC502㉜	O (O.D)	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4
CAP TRQ 1	MA106 Board IC502㉝	O (O.D)	∗1							∗1	∗1			∗6		∗1	∗1		
CAP TRQ 2	MA106 Board IC502㉞	O (O.D)								∗1	∗1								
CAP STOP	MA106 Board IC502㊳	O (O.D)	H	L	L	L	H	H	L	H	H	H	L	∗5	H	H	H	H	L
CAP RVS	MA106 Board IC502(72)	O	H	H			L	H	H/L	L	H	L	L	L/∗5	L	L	H	L	L
CAP DA ∗8	MA106 Board IC502(73)	O																	
T SENS	MA106 Board IC502⑰	I	∗7	∗4	∗4	∗4	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7
S SENS	MA106 Board IC502⑱	I	∗7	∗4	∗4	∗4	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7

∗1. "H" when mechanism mode transition.

∗2. "L" when erasing protection tab is bent, "H" when not bent.

∗3. Pulse of period in proportion to reel rotating speed.

∗4. Approx. 2 msec period "H" pulse.

∗5. Pulse at tape running.

∗6. "L" when tape running and CAP RVS is "H".

∗7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.

3-7. SYSTEM CONTROL—SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal	Pin. No.	I/O	I/O level
$\overline{\text{COSMO·RESET}}$	MA106 Board IC502㊵	I	Normally "H". "L" when service interruption is detected or restored.
$\overline{\text{COSMO·CS}}$	MA106 Board IC502㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
SI·BUS	MA106 Board IC502㊺	I	Serial communication data from timer microprocessor. V period "L" pulse.
SO·BUS	MA106 Board IC502㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA106 Board IC502㊼	I	Serial communication clock with timer microprocessor. V period "L" pulse.

3-8. SYSTEM CONTROL—AUDIO BLOCK INTERFACE

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB· PAUSE	SLOW	×2	CUE	REVIEW	REC	REC· PAUSE
$\overline{\text{AF PB}}$	MA106 Board IC502(96)	O	H	H	H	L	L	L	L	L	L	H	H
MONI (L)	MA106 Board IC502(84)	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	MA106 Board IC502(85)	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	MA106 Board IC502(61)	I	AF RF envelope signal input terminal for automatic tracking.										
NA PB	MA106 Board IC502⑪	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA106 Board IC502㊲	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
$\overline{\text{SP}}$	MA106 Board IC502(91)	O	*2	*2	*2	*3	*3	3	*3	*3	*2	*2	*2
NA REC·$\overline{\text{P}}$	MA106 Board IC502⑩	O	L	L	L	L	L	L	L	L	L	H	L
AF REC$\overline{\text{P}}$	MA106 Board IC502④	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA106 Board IC502(100)	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	MA106 Board IC502(51)	I	Input terminal for AF switching position adjustment.										
BB MUTE	MA106 Board IC502(76)	O	*7	*7	*7	*8	H	H	H	H	H	*7	*7
AF MIX	MA106 Board IC502⑲	O (O.D)	L	L	L	*9	*9	*9	*9	*9	*9	L	L
METER (L)	MA106 Board IC502㊽	I	Input terminal for the audio level meter (left) indication.										
METER (R)	MA106 Board IC502㊾	I	Input terminal for the audio level meter (right) indication.										
$\overline{\text{FULL ERS}}$	MA106 Board IC502㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H
NOR A MUTE	MA106 Board IC502㉟	**O**	**L**	**L**	**L**	***4**	**H**	**H**	**H**	**H**	**H**	**L**	**L**
NOR CONT 1	MA106 Board IC502(79)	**O**	***6. Normal audio control signal.**										
NOR CONT 2	MA106 Board IC502(80)	**O**											

*1. Selected by audio monitor.

Signal \ Audio monitor	STEREO OR MAIN, SUB, L, R	MAIN L	SUB R	(NORMAL)
MONI (L) ⑩	H	H	L	L
MONI (R) ⑨	H	L	H	L

*2. Selected by SP/EP selector. SP mode: "L", EP mode: "H".

*3. Selected by tape recording mode. SP mode: "L", EP mode: "H".

*4. "H" when CTL signal is not played back.

*5. 30 Hz, 50% duty pulse approx. 5 msec delayed from RF SW P.

*6.

Signal \ Input	SAP	
	Selected	Not selected
NOR CONT 1 (79)	H	H
NOR CONT 2 (80)	L	H

*7. "H" when power ON/OFF selected.

*8. "H" when CTL signal is not played back.

*9. "H" when hi-fi/NORMAL MIX ON.

3-9. SYSTEM CONTROL—TUNER BLOCK INTERFACE

Signal	Pin. No.	I/O	I/O level
$\overline{\text{STEREO}}$	MA106 Board IC502㉑	I	Tuner audio mode input terminal. "L" when stereo.
TAMUTE	MA106 Board IC502㉓	O	Tuner audio mute output. "H" when not used channel is selected.
$\overline{\text{F MONO}}$	MA106 Board IC502㉛	O (O. D)	"L" when tuner audio and auto stereo are turned OFF.

3-10. SYSTEM CONTROL AND RF MODULATOR—INPUT SELECTION BLOCK INTERFACE

Signal	Pin. No.	I/O	I/O level
TV/VTR	MA106 Board IC502⑳	O	"L" when RF modulator through.
LINE 1	MA106 Board IC502(81)	O	*1. Input select control signal.
LINE 2	MA106 Board IC502(82)	O	

*1.

Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1 (81)	L	H	L
LINE 2 (82)	L	L	H

3-11. SERVO/SYSTEM CONTROL—MICROPROCESSOR PIN FUNCTION (MA-106 BOARD IC502)

Pin. No.	Port	I/O	Signal	Function
1	PB5/PPO13	O	RF SWP	Video switching pulse output
2	PB4/PPO12	O	Q VD	False VD pulse output
3	PB3/PPO11	O	Q HD ENBL	False HD voltage level control
4	PB2/PPO10	O	AF REC $\overline{\text{P}}$	"H" output when hi-fi audio REC
5	PB1/PPO9	O	REC $\overline{\text{P}}$	"H" output when video REC·PAUSE
6	PB0/PPO8	O	FE ON	Flaying erase ON/OFF output.
7	PC7/RTO7	O	REC CTL	REC CTL output
8	PC6/RTO6	O	INT VD	Internal VD signal. Not used
9	PC5/RTO5	O	RC CONT	Not used
10	PC4/RTO4	O	NA RECP	"H" when normal audio REC
11	PC3/RTO3	O	NA PB	"H" when normal audio playback
12	PC2/PPO18	O	CAM	CAM motor select
13	PC1/PPO17	O	CW	Clockwise/counterclockwise signal output
14	PC0/PPO16	O	LOAD	Load motor select
15	PJ7	I	CIN/REC PRF	Erasing protection tab, cassette IN detection input
16	PJ6	I	C DOWN	Cassette up/down detection input
17	PJ5	I	T SENS	T end sensor input
18	PJ4	I	S SENS	S end sensor input
19	PJ3	O	AF MIX	hi-fi/normal audio MIX control
20	PJ2	O	ANT VTR	RF modulator ON/OFF control
21	PJ1	I	STEREO	Tuner audio mode input
22	PJ0	I	BILING	Not used
23	PD7	O	TA MUTE	Tuner audio MUTE signal
24	PD6	O	STEP PLS	"H" when capstan step drive
25	PD5	O	DESCRAMBLE	Not used
26	PD4	O	TUNER/BS	Not used
27	PD3	O	BS MONITOR	Not used
28	PD2	O	CTL REC	"H" when CTR writing
29	PD1	O	CTL STEP	STEP motion control of CTL amp
30	PD0	O	INDEX	Index control. "H" when playback index writing or erasing.
31	PH7	O	F MONO	Tuner forced monaural signal
32	PH6	O	END LED	END sensor lamp drive output
33	PH5	O	CAP TPQ2	Capstan current control. "L" when FF/REW➡ stop
34	PH4	O	CAP TPQ1	Capstan current control. "L" when slow down
35	PH3	O	NOR A MUTE	"H" when normal audio MUTE
36	PH2	O	$\overline{\text{FULL ERS}}$	"L" when full erase head operation
37	PH1	O	A MUTE	Audio MUTE output
38	PH0	O	CAP STOP	Capstan STOP signal output
39	MP	I	MP	Fixed at "L" level
40	$\overline{\text{RST}}$	I	COSMO $\overline{\text{RST}}$	System reset input
41	Vss			GND
42	XTAL		XTAL	System clock 12 MHz
43	EXTAL		EXTAL	
44	$\overline{\text{CS0}}$	I	COSMO $\overline{\text{CS}}$	Chip select signal
45	SI0	I	SI0	Signal for serial communication
46	SO0	O	SO0	
47	$\overline{\text{SCK0}}$	I	$\overline{\text{SCK0}}$	
48	PF7/AN11	I	METER (L)	Level meter (L) input
49	PF6/AN10	I	METER (R)	Level meter (R) input

Pin. No.	Port	I/O	Signal	Function
50	PF5／AN9	O		Not used
51	PF4／AN8	I	AF SW POSI	VR input for hi-fi switching pulse position adjustment
52	AVss		AVss	GND
53	AVREF		AVREF	AD port reference input. UNSW 5V
54	AVDD		AVDD	UNSW 5V
55	PF3／AF7	I	MODE4	Mechanism section CAM encoder input
56	PF2／AN6	I	MODE3	
57	PF1／AN5	I	MODE2	
58	PF0／AN4	I	MODE1	
59	AN3	I	DEW	Not used
60	AN2	I	RF ENV	Video RF envelope input
61	AN1	I	AF ENV	hi-fi audio RF envelope input
62	AN0	I	RF SW POSI	VR input for RF SWP adjustment
63	PG7／EXI1	I	S REEL	S reel sensor input
64	PG6／EXI0	I	T REEL	T reel sensor input
65	PG5／SYNC1	I		Not used
66	PG4／SYNC0	I	V SYNC	Composite sync input
67	PG3／$\overline{\text{PBCTL}}$	I	PB CTL	Playback CTL input
68	PG2／DPG	I	DRM PG	Drum PG input
69	PG1／DFG	I	DRM FG	Drum FG input
70	PG0／CFG	I	CAP FG	Capstan FG input
71	PE7／DAB1	O	OSD MUTE	Video output mute signal
72	PE6／DABO	O	CAP RVS	Capstan reverse signal output
73	PE5／DAA1	O	CAP D／A	Capstan error D/A output
74	PE4／DAA0	O	DRM D／A	Drum error D/A output
75	PE3／PWM1	O	BASS BOOST	Not used
76	PE2／PWM0	O	BB MUTE	"H" when audio MUTE
77	PE1／EC／INT	I	VD CTL	Playback CTL input
78	PE0／INTO	I		Not used
79	PI7／SIL	O	NORM CONT1	Normal audio select control signal
80	PI6／SOL	O	NORM CONT2	
81	PI5／$\overline{\text{SCKL}}$	O	LINE1	Video/audio input select signal
82	PI4／INT1	O	LINE2	
83	PI3／TO	O	MONI R	Audio output control signal
84	PI2／PWM	O	MONI L	
85	PI1／PO	I/O	HEAD CONT	Head select control
86	TEX	I		Not used
87	TX	O		Not used
88	Vss			GND
89	VDD			UNSW 5V
90	N.C.			Connected to UNSW 5V
91	PA7／PPO7	O	$\overline{\text{SP}}$	"L" when SP mode
92	PA6／PPO6	O	EP	"H" when EP mode.
93	PA5／PPO5	O	LP	"H" when LP mode
94	PA4／PPO4	O	EDIT	"H" when EDIT
95	PA3／PPO3	O	V PB	"L" when video playback
96	PA2／PPO2	O	$\overline{\text{AF PB}}$	"L" when hi-fi audio playback
97	PA1／PPO1	O	RP PB	"H" when video signal playback. Inverse signal of REC
98	PA0／PPO0	O	REC	Rise up signal of head amp recording power
99	PB7／PPO15	O		Not used
100	PB6／PPO14	O	AF SWP	hi-fi switching pulse output

3-12. TIMER/MODE CONTROL—MICROPROCESSOR PIN FUNCTION (MF-140 BOARD IC901)

Pin. No.	Port	I/O	Signal	Function
1	S4	O	S0	Display segment signal 0
2	S5	O	S1	Display segment signal 1
3	S6	O	S2	Display segment signal 2
4	S7	O	S3	Display segment signal 3
5	S8	O	S4	Display segment signal 4
6	S9	O	S5	Display segment signal 5
7	S10	O	S6	Display segment signal 6
8	S11	O	S7	Display segment signal 7
9	S12	O	S8	Display segment signal 8
10	S13	O	S9	Display segment signal 9
11	S14	O	S10	Display segment signal 10
12	S15	O	S11	Display segment signal 11
13	S16	O	S12	Display segment signal 12
14	S17	O	S13	Display segment signal 13
15	T13	O	S14	Display segment signal 14
16	T12	O	S15	Display segment signal 15
17	T11	O	T11	Display timing signal 11
18	T10	O	T10	Display timing signal 10
19	T9	O	T9	Display timing signal 9
20	T8	O	T8	Display timing signal 8
21	T7	O	T7	Display timing signal 7
22	T6	O	T6	Display timing signal 6
23	T5	O	T5	Display timing signal 5
24	T4	O	T4	Display timing signal 4
25	T3	O	T3	Display timing signal 3
26	T2	O	T2	Display timing signal 2
27	T1	O	T1	Display timing signal 1
28	T0	O	T0	Display timing signal 0
29	INT	I	INT	Not used
30	TX		TX	Clock for back-up 32.768 kHz
31	TEX		TEX	Clock for back-up 32.768 kHz
32	$\overline{\text{RST}}$	I	$\overline{\text{RESET}}$	Reset signal input
33	V_{DD}			Connected to 5V power
34	V_{DD}		V_{DD}	5V power
35	AD0	I	AD0 (RING 2)	KEY input *1
36	AD1	I	AD1 (RING 1)	KEY input *1
37	AD2	I	AD2 (RING 0)	KEY input *1, 2
38	AD3	I	AD3	KEY input *2
39	AD4	I	AD4	KEY input *2
40	AD5	I	AD5	KEY input *2
41	AD6	I	AD6	KEY input *2
42	AD7	I	AD7	KEY input *2
43	EC	I	$\overline{\text{EC}}$	Not used
44	SCLK	O	SERIAL CLK	Serial communication clock
45	SO	O	SERIAL OUT	Serial data output
46	SI	I	SERIAL IN	Serial data input
47	PA0	O	$\overline{\text{CG CS}}$	CG microprocessor chip select signal
48	PA1	I	**EDIT**	"H" when EDIT mode
49	PA2	I	MEM DATA	Non-volatile memory data signal

Pin. No.	Port	I/O	Signal	Function
50	PA3	I	$\overline{\text{CG HDET}}$	Video signal, existence judgment input. "L" : video signal
51	PF0	O	$\overline{\text{COSMO CS}}$	SS microprocessor chip select signal
52	PF1	O	TU DATA	Tuner control signal
53	PF2	O	TU ENABLE	Tuner control signal
54	PF3	O	TU CLK	Tuner control signal
55	PE0	I	AFT DOWN	Tuner control signal
56	PE1	I	AFT UP	Tuner control signal
57	PE2	I		Not used
58	PE3	I	FWD/$\overline{\text{RVS}}$	Shuttle ring input *1
59	PY0	O	$\overline{\text{COSMO RST}}$	SS microprocessor reset signal output
60	PY1	O	**BUZZER**	PWM output for buzzer
61	PY2	I	POWER FAIL	"L" when service interruption
62	PY3	I	SIRCS IN	Remote control input
63	PD0	O	$\overline{\textbf{TEST}}$	For adjustment
64	PD1	O		Not used
65	PD2	O	**U/C**	USA/CND model select pin. "L" : USA
66	PD3	O	**SELECTABLE PIN**	SLV-595HF/696HF select pin. "L" : SLV-595HF
67	PC0	O	$\overline{\text{BS CS}}$	BS microprocessor chip select signal
68	PC1	O	MEM CS	Non-volatile memory chip select signal
69	PC2	O	MEM CLOCK	Non-volatile memory clock signal
70	PC3	O	MEM WRITE	Non-volatile memory write data
71	Vss		Vss	GND
72	XTAL		XTAL	Clock 4.19 MHz
73	V_{DD}		V_{DD}	Connected to 5V power
74	EXTAL		EXTAL	Clock 4.19 MHz
75	V_{REF}		V_{REF}	A/D input reference power
76	V_{FDP}		V_{FDP}	Power for fluorescent indicator
77	PH3	O	**POWER ON**	"H" output when power ON
78	PH2	O	**TM ON LINE**	Not used
79	PH1	O	AUTO PRESET	Not used
80	PH0	O	BS **LED**	Not used

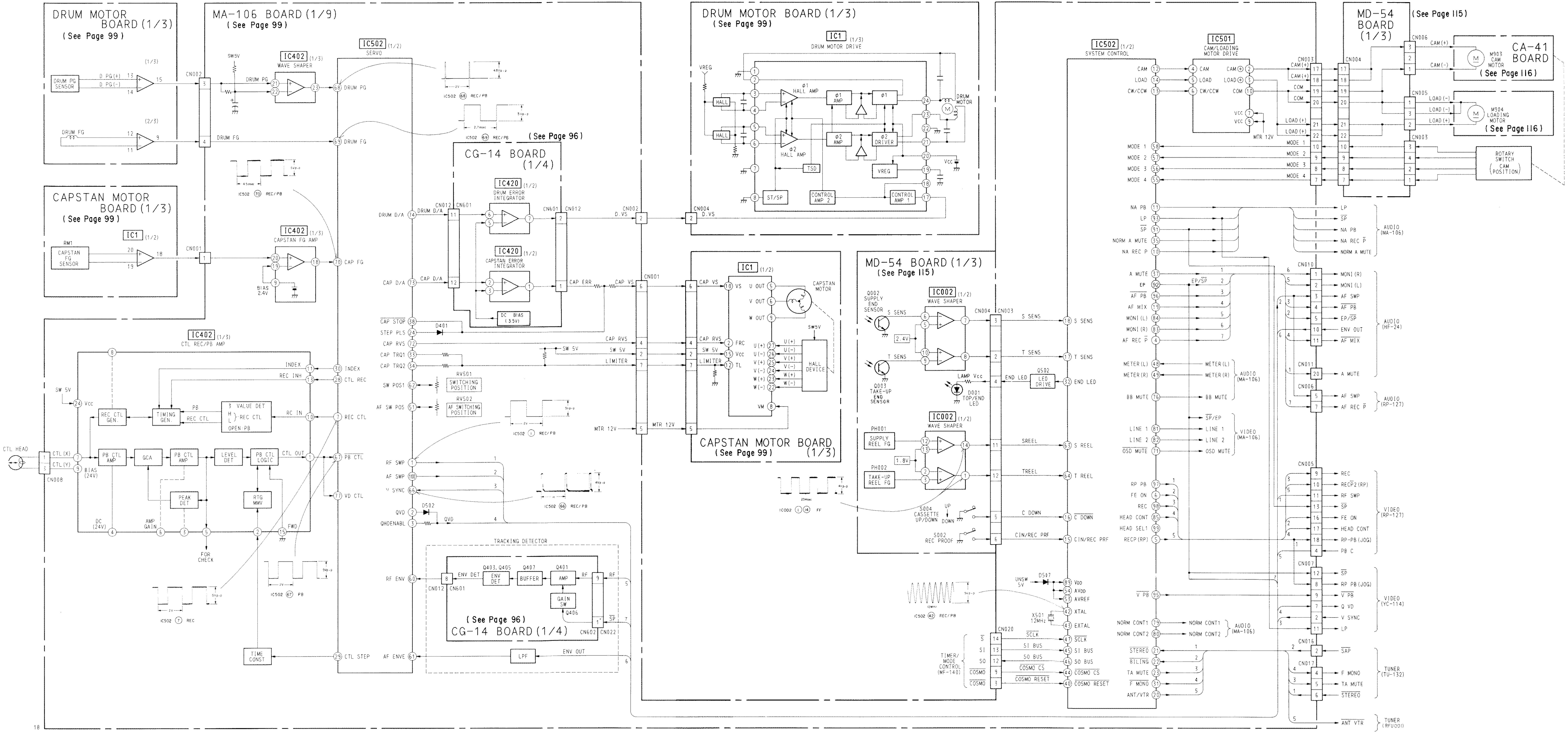
*1. Shuttle ring position and terminal input level

Shuttle ring position	REW			STOP							FF		
	REVIEW		−×2	−×1	−1/5		PLAY/STILL	1/5		×1	×2	CUE	
AD0㉟ (RING 0)	L		L	H	H		H	H		H	L	L	
AD1㊱ (RING 1)	H	L	H	H	L		H	L		H	H	L	H
AD2㊲ (RING 2)	H	L	L	L	L	H	H	H	L	L	L	L	H
FWD/RVS(58)	L						H						

*2. Pressed key and terminal input voltage

Input terminal \ Input voltage	0V	1.1V	2.1V	3.1V	4.1V	5.5V
AD7㊷	REC	Tracking AUTO/MANUAL	Tracking ▼	Channel +	ANTENNA (TV/VTR)	No key input
AD6㊶	Quick timer	Counter Reset	INPUT SELECT	VIDEO INSERT	AUDIO INSERT	No Key input
AD5㊵	EJECT	TIMER REC	Tracking ▲	Channel −	REC MODE (SP/EP)	No Key input
AD4㊴	POWER		VTR mode 1	VTR mode 2		VTR mode 3
AD3㊳	STOP	PLAY				No Key input
AD2㊲	Shuttle ring RING 2	HIGH SPEED REWIND	PAUSE			No Key input

3-13. SERVO/SYSTEM CONTROL BLOCK DIAGRAM


DRUM MOTOR BOARD (1/3)
(See Page 99)
DRUM PG SENSOR
DRUM FG
CAPSTAN MOTOR BOARD (1/3)
(See Page 99)
CAPSTAN FG SENSOR
IC1 (1/2)
MA-106 BOARD (1/9)
(See Page 99)
IC402 (1/3) WAVE SHAPER
IC402 (1/3) CAPSTAN FG AMP
IC402 (1/3) CTL REC/PB AMP
IC502 (1/2) SERVO
REC CTL GEN.
TIMING GEN.
3 VALUE DET
PB CTL AMP
GCA
LEVEL DET
PB CTL LOGIC
PEAK DET
RTG MMV
TIME CONST
CTL HEAD
FOR CHECK
CG-14 BOARD (1/4)
(See Page 96)
IC420 (1/2) DRUM ERROR INTEGRATOR
IC420 (1/2) CAPSTAN ERROR INTEGRATOR
DC BIAS (3.5V)
RV501 SWITCHING POSITION
RV502 AF SWITCHING POSITION
TRACKING DETECTOR
ENV DET
BUFFER
AMP
GAIN SW
LPF
DRUM MOTOR BOARD (1/3)
(See Page 99)
IC1 (1/3) DRUM MOTOR DRIVE
HALL AMP
DRIVER
DRUM MOTOR
ST/SP
CONTROL AMP 2
CONTROL AMP 1
TSD
VREG
CAPSTAN MOTOR BOARD (1/3)
(See Page 99)
IC1 (1/2)
CAPSTAN MOTOR
HALL DEVICE
MD-54 BOARD (1/3)
(See Page 115)
IC002 (1/2) WAVE SHAPER
Q002 SUPPLY END SENSOR
Q003 TAKE-UP END SENSOR
D001 TOP/END LED
Q502 LED DRIVE
PH001 SUPPLY REEL FG
PH002 TAKE-UP REEL FG
S004 CASSETTE UP/DOWN
S002 REC PROOF
IC502 (1/2) SYSTEM CONTROL
X501 12MHz
TIMER/MODE CONTROL (MF-140)
IC501 CAM/LOADING MOTOR DRIVE
MD-54 BOARD (1/3)
(See Page 115)
CA-41 BOARD
(See Page 116)
M903 CAM MOTOR
M904 LOADING MOTOR
ROTARY SWITCH (CAM POSITION)
AUDIO (MA-106)
AUDIO (HF-24)
AUDIO (RP-127)
VIDEO (MA-106)
VIDEO (RP-127)
VIDEO (YC-114)
TUNER (TU-132)
TUNER (RFU001)

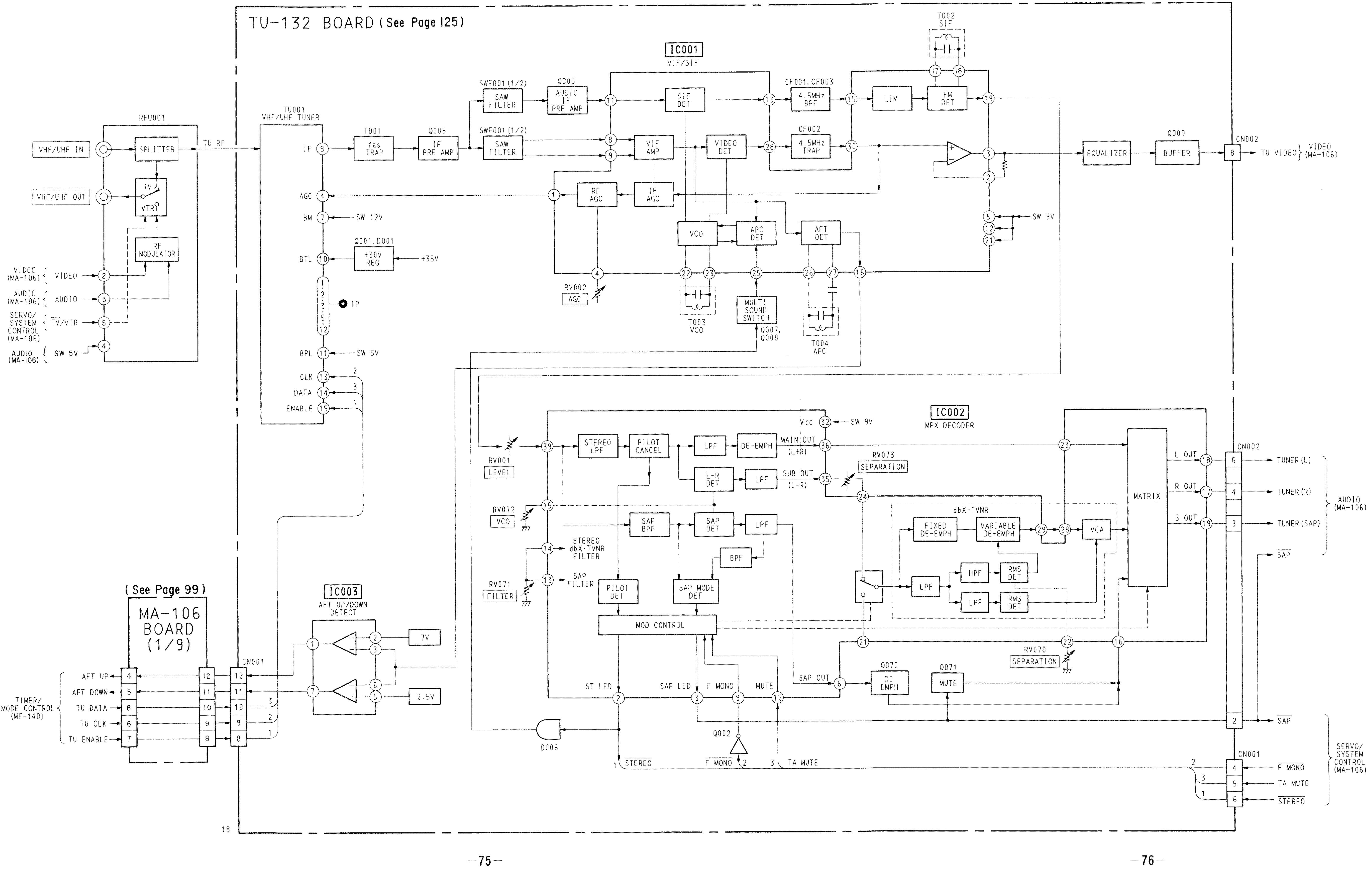
3-14. AUDIO BLOCK DIAGRAM

RP-127 BOARD (1/3) (See Page 85)
IC260
(See Page 99)
MA-106 BOARD (1/9)
HF-24 BOARD (1/2) (See Page 119)
IC201
NOISE REDUCTION
MA-106 BOARD (1/9) (See Page 109)
IC304
IC201
AUDIO INPUT SELECT
MA-106 BOARD (1/9) (See Page 99)
IC301
(See Page 131)
MF-140 BOARD (1/4)
(See Page 137)
MF-141 BOARD (1/4)
TP401 FOR CHECK
SERVO/ SYSTEM CONTROL (MA-106)

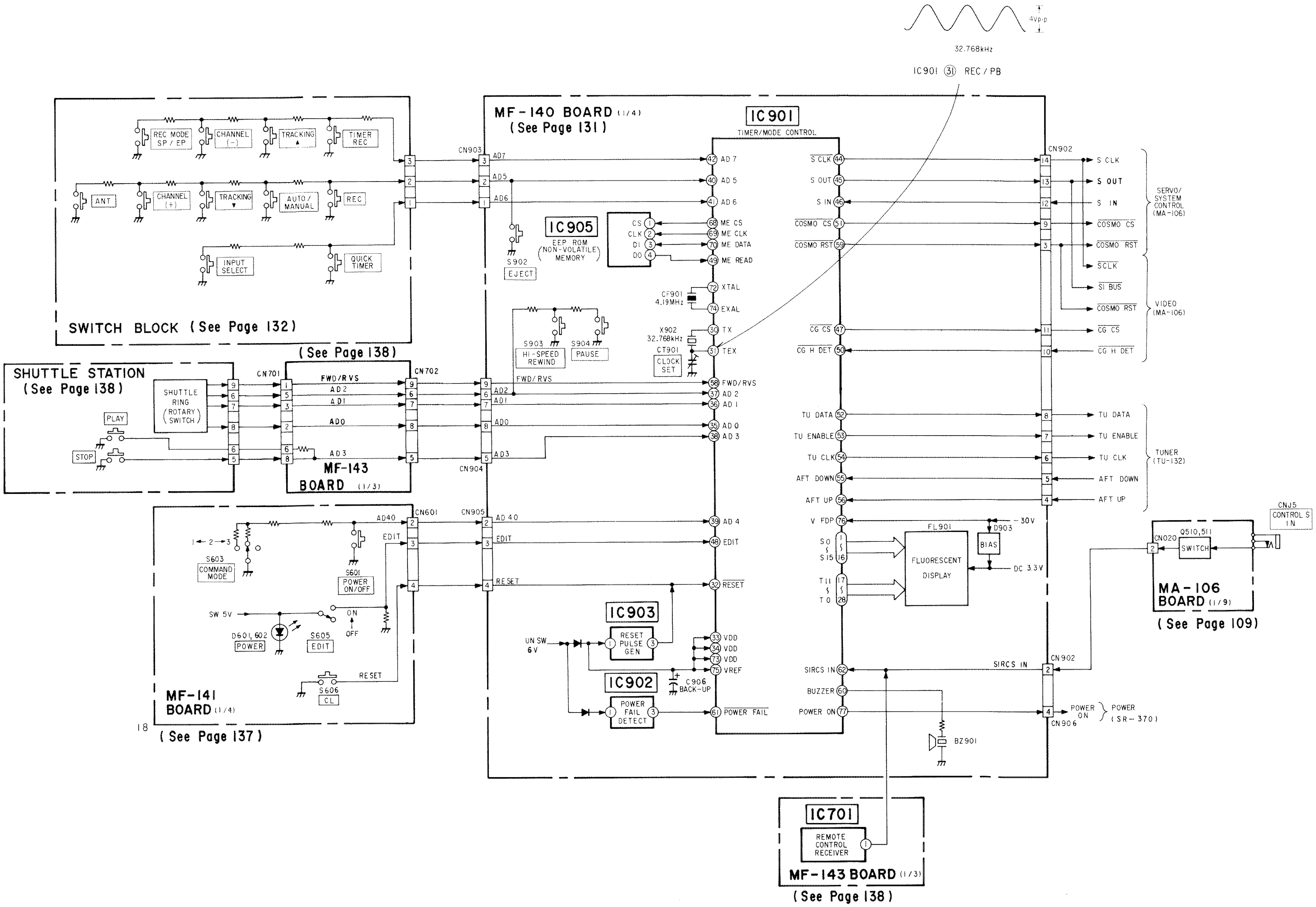
LINE1	LINE2	MODE
L	L	TU
H	L	L1
L	H	L2

NORM CONT1	NORM CONT2	
H	H	MIX
L	H	BIL
H	L	SAP

3-15. TUNER BLOCK DIAGRAM

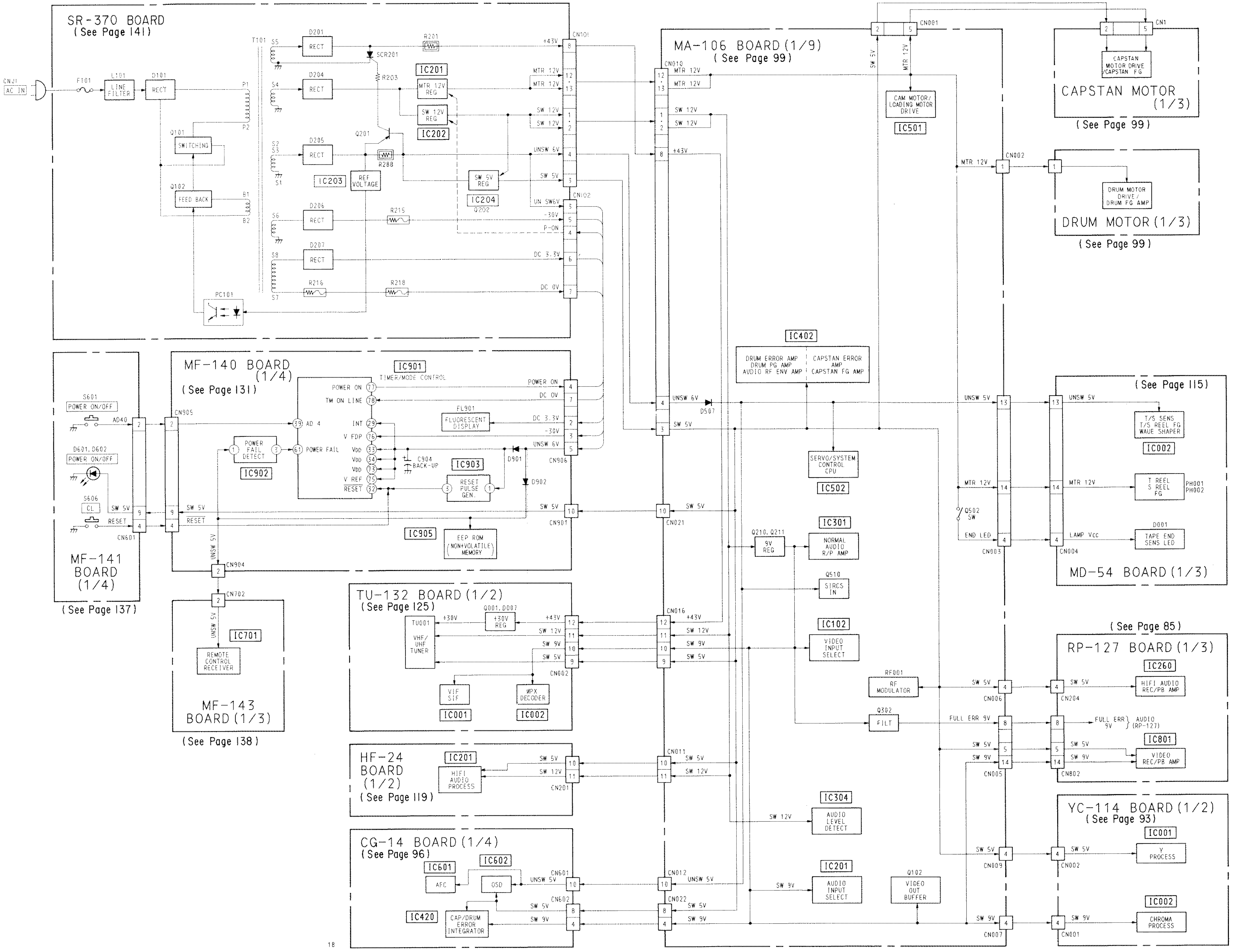

TU-132 BOARD (See Page 125)
RFU001
VHF/UHF IN
VHF/UHF OUT
SPLITTER
TV
VTR
RF MODULATOR
VIDEO (MA-106)
VIDEO
AUDIO (MA-106)
AUDIO
SERVO/ SYSTEM CONTROL (MA-106)
$\overline{\text{TV}}$/VTR
AUDIO (MA-106)
SW 5V
TU RF
TU001 VHF/UHF TUNER
IF
AGC
BM
BTL
TP
BPL
CLK
DATA
ENABLE
SW 12V
Q001, D001
+30V REG
+35V
SW 5V
T001
fas TRAP
Q006
IF PRE AMP
SWF001 (1/2)
SAW FILTER
SWF001 (1/2)
SAW FILTER
Q005
AUDIO IF PRE AMP
IC001
VIF/SIF
SIF DET
VIF AMP
VIDEO DET
RF AGC
IF AGC
VCO
APC DET
AFT DET
RV002
AGC
T003 VCO
MULTI SOUND SWITCH
Q007, Q008
T004 AFC
CF001, CF003
4.5MHz BPF
CF002
4.5MHz TRAP
LIM
FM DET
T002 SIF
SW 9V
EQUALIZER
Q009
BUFFER
CN002
TU VIDEO
VIDEO (MA-106)
IC002
MPX DECODER
Vcc
SW 9V
RV001
LEVEL
STEREO LPF
PILOT CANCEL
LPF
DE-EMPH
MAIN OUT (L+R)
L-R DET
LPF
SUB OUT (L-R)
RV073
SEPARATION
RV072
VCO
SAP BPF
SAP DET
LPF
BPF
STEREO dbX·TVNR FILTER
RV071
FILTER
SAP FILTER
PILOT DET
SAP MODE DET
MOD CONTROL
dbX-TVNR
FIXED DE-EMPH
VARIABLE DE-EMPH
VCA
HPF
RMS DET
LPF
RMS DET
MATRIX
L OUT
R OUT
S OUT
CN002
TUNER (L)
TUNER (R)
TUNER (SAP)
AUDIO (MA-106)
$\overline{\text{SAP}}$
RV070
SEPARATION
ST LED
SAP LED
F MONO
MUTE
SAP OUT
Q070
DE EMPH
Q071
MUTE
D006
Q002
$\overline{\text{STEREO}}$
$\overline{\text{F MONO}}$
TA MUTE
$\overline{\text{SAP}}$
CN001
$\overline{\text{F MONO}}$
TA MUTE
$\overline{\text{STEREO}}$
SERVO/ SYSTEM CONTROL (MA-106)
(See Page 99)
MA-106 BOARD (1/9)
TIMER/ MODE CONTROL (MF-140)
AFT UP
AFT DOWN
TU DATA
TU CLK
TU ENABLE
CN001
IC003
AFT UP/DOWN DETECT
7V
2.5V

3-16. TIMER/MODE CONTROL BLOCK DIAGRAM



4Vp-p
32.768kHz
IC901 ㉛ REC / PB
SWITCH BLOCK (See Page 132)
REC MODE SP / EP
CHANNEL (−)
TRACKING ▲
TIMER REC
ANT
CHANNEL (+)
TRACKING ▼
AUTO / MANUAL
REC
INPUT SELECT
QUICK TIMER
MF-140 BOARD (1/4)
(See Page 131)
IC901
TIMER/MODE CONTROL
CN903
AD7
AD5
AD6
IC905
EEP ROM (NON-VOLATILE MEMORY)
CS ①
CLK ②
DI ③
DO ④
S902
EJECT
CF901 4.19MHz
X902 32.768kHz
CT901
CLOCK SET
S903
HI-SPEED REWIND
S904
PAUSE
FWD/RVS
㊷ AD 7
㊵ AD 5
㊶ AD 6
(68) ME CS
(69) ME CLK
(70) ME DATA
㊾ ME READ
(72) XTAL
(74) EXAL
㉚ TX
㉛ TEX
(58) FWD/RVS
㊲ AD 2
㊱ AD 1
㉟ AD 0
㊳ AD 3
㊴ AD 4
㊽ EDIT
㉜ RESET
㉝ VDD
㉞ VDD
(73) VDD
(75) VREF
(61) POWER FAIL
S CLK ㊹
S OUT ㊺
S IN ㊻
COSMO CS (51)
COSMO RST (59)
CG CS ㊼
CG H DET (50)
TU DATA (52)
TU ENABLE (53)
TU CLK (54)
AFT DOWN (55)
AFT UP (56)
V FDP (76)
S0 ~ S15
T11 ~ T0
SIRCS IN (62)
BUZZER (60)
POWER ON (77)
CN902
S CLK
S OUT
S IN
COSMO CS
COSMO RST
SCLK
SI BUS
COSMO RST
CG CS
CG H DET
SERVO/ SYSTEM CONTROL (MA-106)
VIDEO (MA-106)
TU DATA
TU ENABLE
TU CLK
AFT DOWN
AFT UP
TUNER (TU-132)
−30V
D903
FL901
BIAS
FLUORESCENT DISPLAY
DC 3.3V
IC903
RESET PULSE GEN
IC902
POWER FAIL DETECT
UN SW 6V
C906 BACK-UP
SIRCS IN
CN906
POWER ON
POWER (SR-370)
BZ901
SHUTTLE STATION (See Page 138)
SHUTTLE RING (ROTARY SWITCH)
PLAY
STOP
CN701
CN702
(See Page 138)
FWD/RVS
AD2
AD1
AD0
AD3
MF-143 BOARD (1/3)
CN904
MF-141 BOARD (1/4)
(See Page 137)
CN601
CN905
AD40
EDIT
AD 40
RESET
S603
COMMAND MODE
1 ← 2 → 3
S601
POWER ON/OFF
SW 5V
ON
OFF
D601, 602
POWER
S605
EDIT
S606
CL
18
CNJ5
CONTROL S IN
CN020
Q510,511
SWITCH
MA-106 BOARD (1/9)
(See Page 109)
IC701
REMOTE CONTROL RECEIVER
MF-143 BOARD (1/3)
(See Page 138)

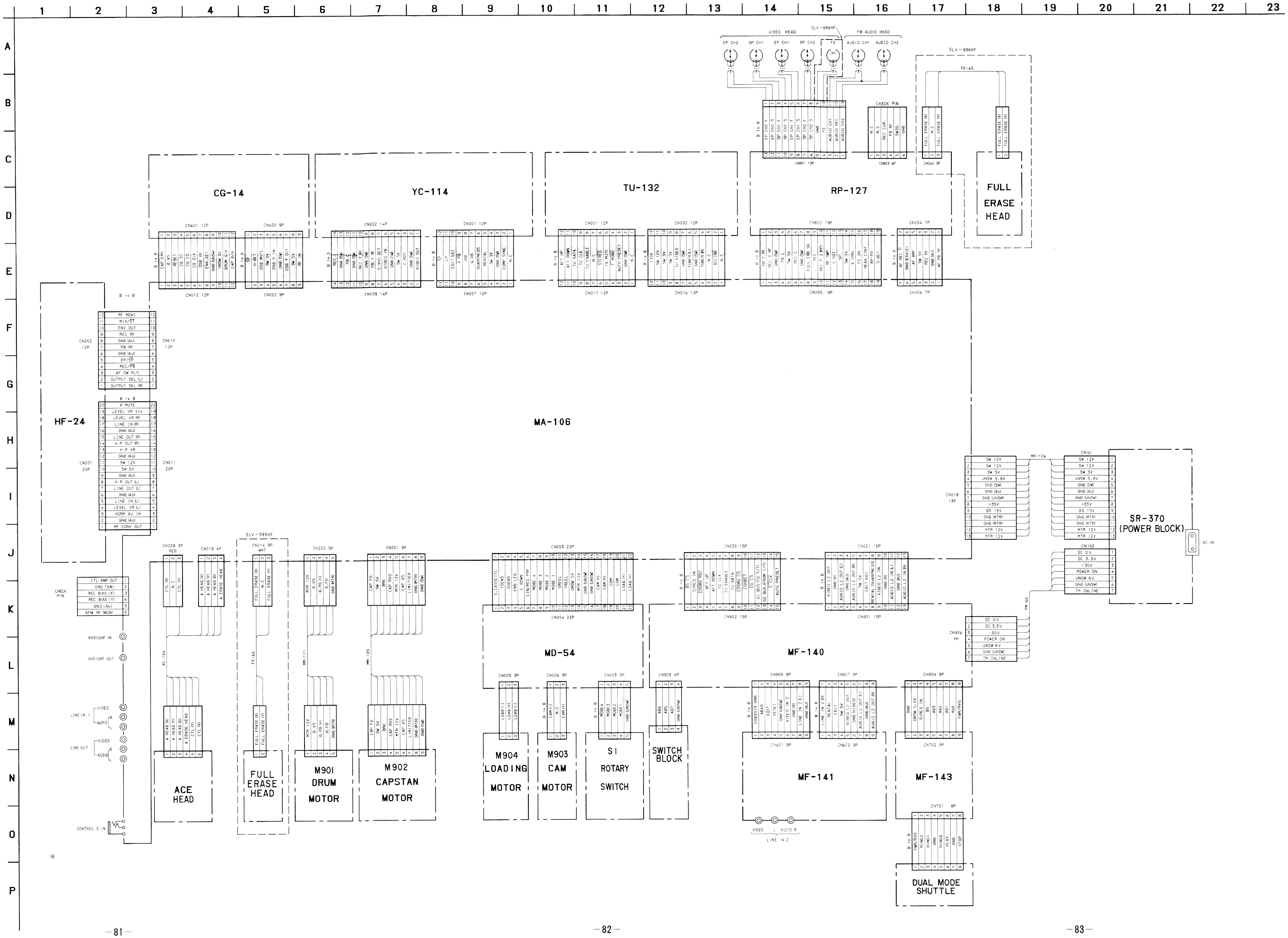
3-17. POWER BLOCK DIAGRAM



SR-370 BOARD
(See Page 141)
CNJ1
AC IN
F101
L101
LINE FILTER
D101
RECT
T101
Q101
SWITCHING
Q102
FEED BACK
PC101
D201
RECT
D204
RECT
D205
RECT
D206
RECT
D207
RECT
SCR201
R201
R203
Q201
R288
IC201
MTR 12V REG
IC202
SW 12V REG
IC203
REF VOLTAGE
IC204
SW 5V REG
Q202
R215
R216
R218
CN101
+43V
MTR 12V
SW 12V
UNSW 6V
SW 5V
CN102
UN SW6V
-30V
P-ON
DC 3.3V
DC 0V
MF-141 BOARD (1/4)
(See Page 137)
S601
POWER ON/OFF
AD40
D601, D602
POWER ON/OFF
S606
CL
RESET
CN601
MF-140 BOARD (1/4)
(See Page 131)
CN905
IC901
TIMER/MODE CONTROL
POWER ON
TM ON LINE
AD 4
INT
V FDP
POWER FAIL
VDD
V REF
RESET
FL901
FLUORESCENT DISPLAY
C904
BACK-UP
IC902
POWER FAIL DETECT
IC903
RESET PULSE GEN.
D901
D902
CN906
CN901
IC905
EEP ROM (NON-VOLATILE) MEMORY
CN904
MF-143 BOARD (1/3)
(See Page 138)
CN702
IC701
REMOTE CONTROL RECEIVER
TU-132 BOARD (1/2)
(See Page 125)
TU001
VHF/UHF TUNER
Q001, D007
+30V REG
VIF SIF
IC001
MPX DECODER
IC002
CN002
HF-24 BOARD (1/2)
(See Page 119)
IC201
HIFI AUDIO PROCESS
CN201
CG-14 BOARD (1/4)
(See Page 96)
IC601
AFC
IC602
OSD
IC420
CAP/DRUM ERROR INTEGRATOR
CN601
CN602
MA-106 BOARD (1/9)
(See Page 99)
CN010
CN001
CN021
CN016
CN011
CN012
CN022
D567
IC501
CAM MOTOR/LOADING MOTOR DRIVE
IC402
DRUM ERROR AMP
DRUM FG AMP
AUDIO RF ENV AMP
CAPSTAN ERROR AMP
CAPSTAN FG AMP
IC502
SERVO/SYSTEM CONTROL CPU
IC301
NORMAL AUDIO R/P AMP
Q210, Q211
9V REG
Q510
SIRCS IN
IC102
VIDEO INPUT SELECT
RF001
RF MODULATOR
Q302
FILT
IC304
AUDIO LEVEL DETECT
IC201
AUDIO INPUT SELECT
Q102
VIDEO OUT BUFFER
Q502
SW
END LED
CN002
CN003
CN006
CN005
CN009
CN007
CN1
CAPSTAN MOTOR DRIVE/CAPSTAN FG
CAPSTAN MOTOR (1/3)
(See Page 99)
DRUM MOTOR DRIVE/DRUM FG AMP
DRUM MOTOR (1/3)
(See Page 99)
(See Page 115)
MD-54 BOARD (1/3)
T/S SENS T/S REEL FG WAVE SHAPER
IC002
T REEL S REEL FG
PH001
PH002
D001
TAPE END SENS LED
LAMP Vcc
CN004
(See Page 85)
RP-127 BOARD (1/3)
IC260
HIFI AUDIO REC/PB AMP
CN204
FULL ERR 9V
AUDIO (RP-127)
IC801
VIDEO REC/PB AMP
CN802
YC-114 BOARD (1/2)
(See Page 93)
IC001
Y PROCESS
IC002
CHROMA PROCESS
CN002
CN001
SW 5V
SW 9V
SW 12V
UNSW 5V
MTR 12V
+43V
18

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


CG-14
YC-114
TU-132
RP-127
FULL ERASE HEAD
HF-24
MA-106
SR-370 (POWER BLOCK)
MD-54
MF-140
M904 LOADING MOTOR
M903 CAM MOTOR
S1 ROTARY SWITCH
SWITCH BLOCK
MF-141
MF-143
DUAL MODE SHUTTLE
ACE HEAD
FULL ERASE HEAD
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
VIDEO HEAD
FM AUDIO HEAD
SLV-696HF
SLV-595HF
EP CH2
SP CH1
EP CH1
SP CH2
FE
AUDIO CH1
AUDIO CH2
CHECK PIN
MP-106
AC IN
VHF/UHF IN
VHF/UHF OUT
LINE IN 1
LINE OUT
CONTROL S IN
LINE IN 2
AC-166
FE-66
MM-111
MM-109
FE-65
PM-66

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- —— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Circled numbers refer to waveforms.

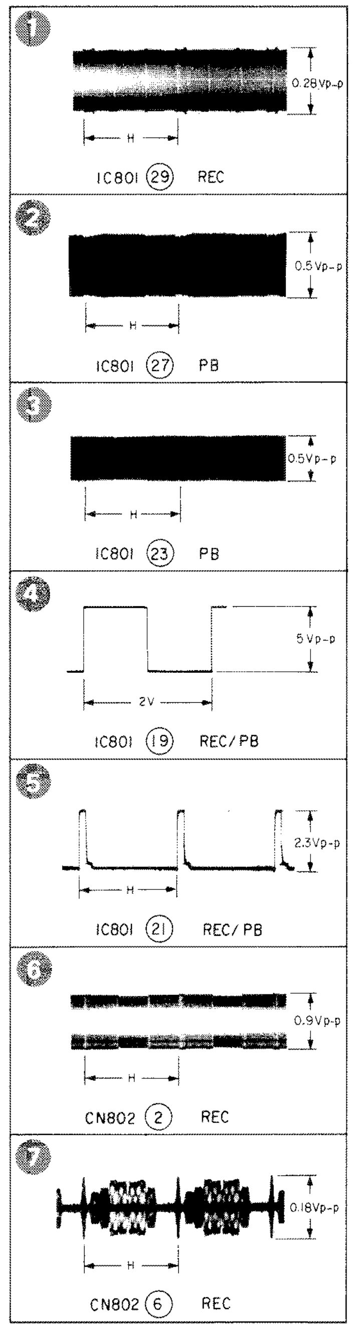
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the pattern face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊞ : nonflammable resistor.
- ⊟ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repeair.
- ━ : B+ Line.
- ‐ ‐ ‐ : B– Line.
- ⇨ : IN/OUT direction of (+, –) B LINE.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltages are taken with a VOM (Input impedance 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

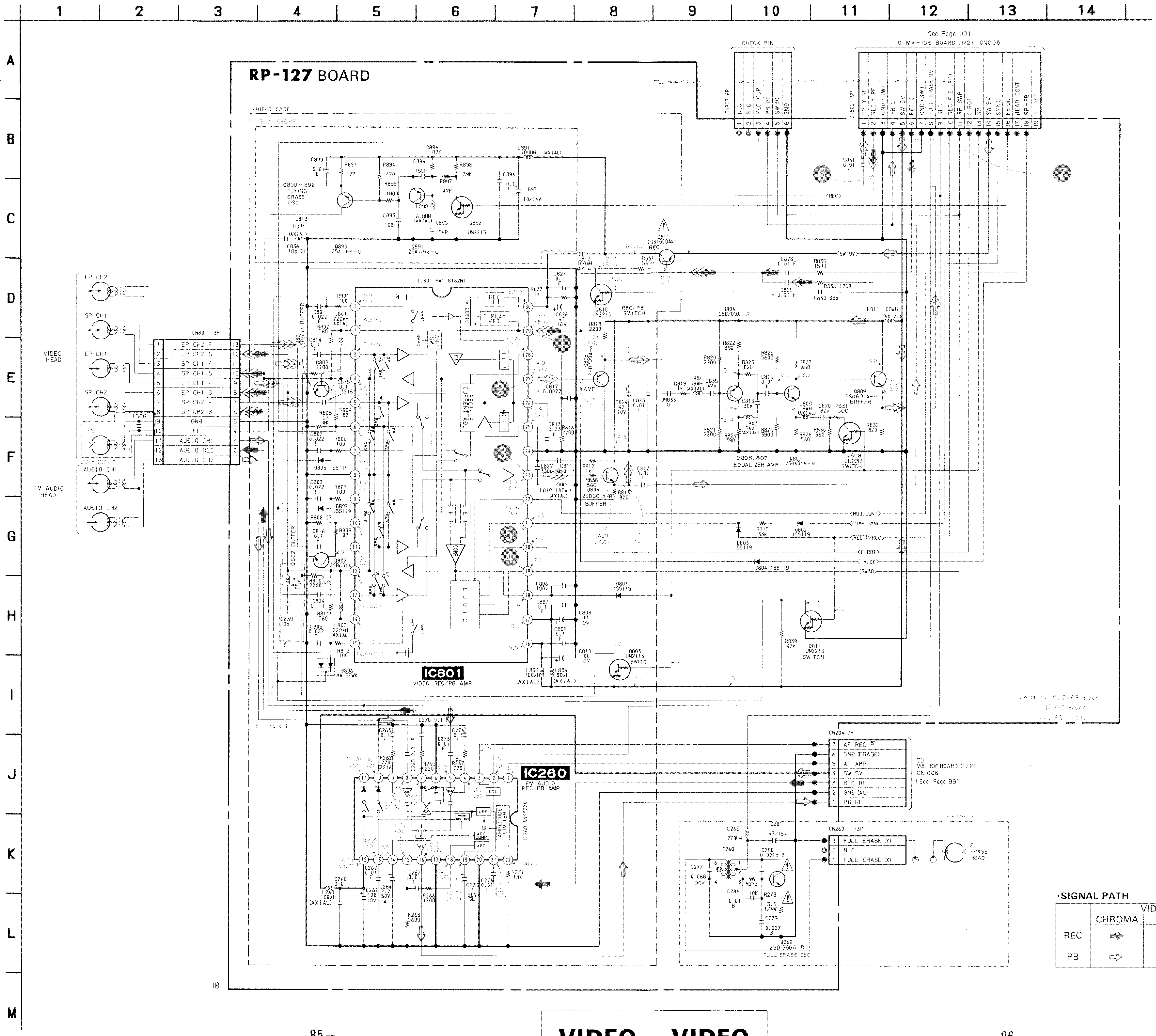
When indicating parts by reference number, please include the board name.

RP-127 BOARD



RP-127 (REC/PB HEAD AMP) SCHEMATIC DIAGRAM

—Ref. No. RP-127 BOARD: 1,000 series—



1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
L
M
RP-127 BOARD
SHIELD CASE
VIDEO HEAD
EP CH2
SP CH1
EP CH1
SP CH2
FE
FM AUDIO HEAD
AUDIO CH1
AUDIO CH2
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
150P
Q801 2SC4601A BUFFER
Q802 BUFFER
Q890–892 FLYING ERASE OSC
IC801 HA11816ZNT
IC801 VIDEO REC/PB AMP
IC260 FM AUDIO REC/PB AMP
REC/PB SWITCH
AMP
Q806, 807 EQUALIZER AMP
Q809 2SC601A-R BUFFER
Q808 UN2213 SWITCH
Q804 2SC601A-R BUFFER
Q814 UN2213 SWITCH
Q803 UN2113 SWITCH
CHECK PIN
CN803 6P
N.C
N.C
REC CUR
PB RF
SW30
GND
(See Page 99)
TO MA-106 BOARD (1/2) CN005
CN802 19P
PB Y RF
REC Y RF
GND (SW)
PB C
SW 5V
REC C
GND (SW)
FULL ERASE 9V
REC
REC P 2 (FP)
RP SWP
C ROT
SP
SW 9V
SYNC
FE ON
HEAD CONT
RP-PB
S-DET
⑥
⑦
(REC)
(SW 9V)
(MODE CONT)
(COMP SYNC)
(REC P/NLC)
(C ROT)
(TRICK)
(SW30)
CN204 7P
AF REC P̄
GND (ERASE)
AF AMP
SW 5V
REC RF
GND (AU)
PB RF
TO MA-106 BOARD (1/2) CN 006 (See Page 99)
CN260 3P
FULL ERASE (Y)
N.C
FULL ERASE (X)
FULL ERASE HEAD
Q260 2SD1366A-Q FULL ERASE OSC
T260
L265 270μH
C281 47/16V

·SIGNAL PATH

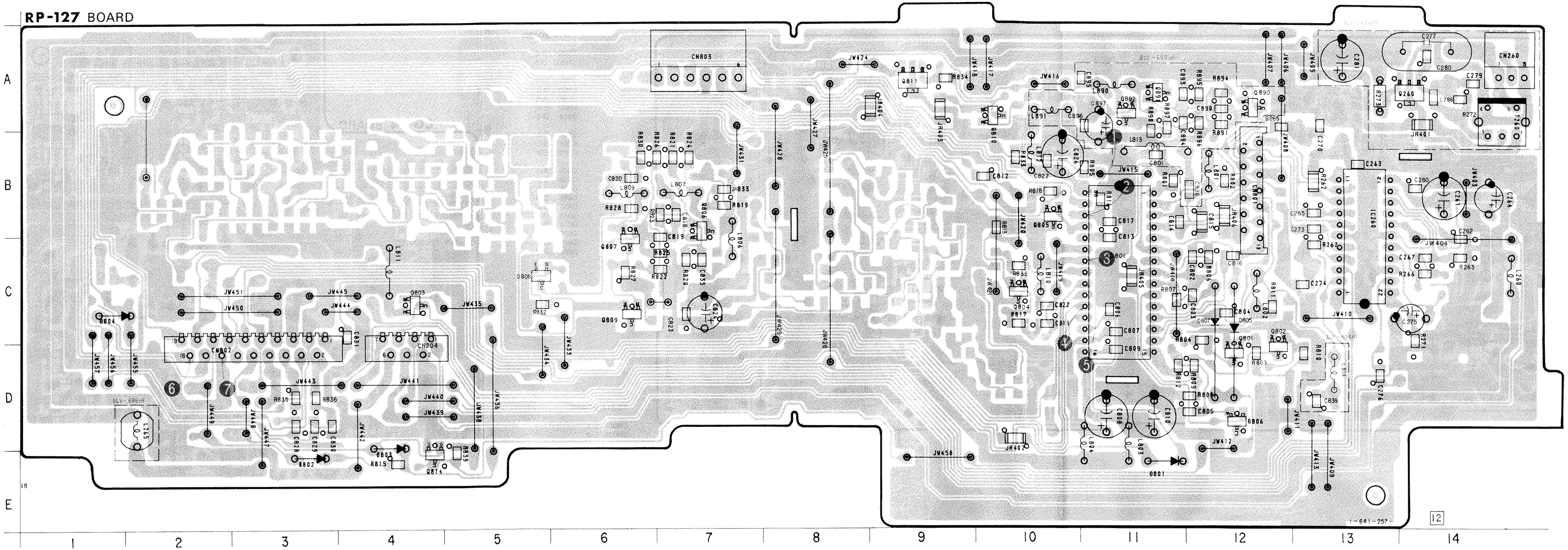
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	➡
PB	⇨	⇨>	⇨>>	⇨

RP-127 (REC/PB HEAD AMP) PRINTED WIRING BOARD

– Ref. No. RP-127 BOARD: 1,000 series –

RP-127 BOARD

CN204	D-4
CN260	A-14
CN801	B-12
CN802	D-3
CN803	A-7
D801	E-11
D802	E-3
D803	D-4
D804	C-1
D805	C-12
D806	D-12
D807	C-12
IC260	B-13
IC801	C-11
Q260	A-14
Q801	D-12
Q802	D-12
Q803	C-4
Q804	C-10
Q805	B-10
Q806	B-7
Q807	C-6
Q808	C-6
Q809	C-6
Q810	A-10
Q811	A-9
Q814	E-4
Q890	A-12
Q891	A-11
Q892	A-11



< DIODE >

D801	8-719-911-19	DIODE	1SS119
D802	8-719-911-19	DIODE	1SS119
D803	8-719-911-19	DIODE	1SS119
D804	8-719-911-19	DIODE	1SS119
D805	8-719-911-19	DIODE	1SS119
D806	8-719-400-18	DIODE	MA152WK
D807	8-719-911-19	DIODE	1SS119

< IC >

IC260	8-759-055-49	IC	AN3327K
IC801	8-759-046-75	IC	HA118152NT

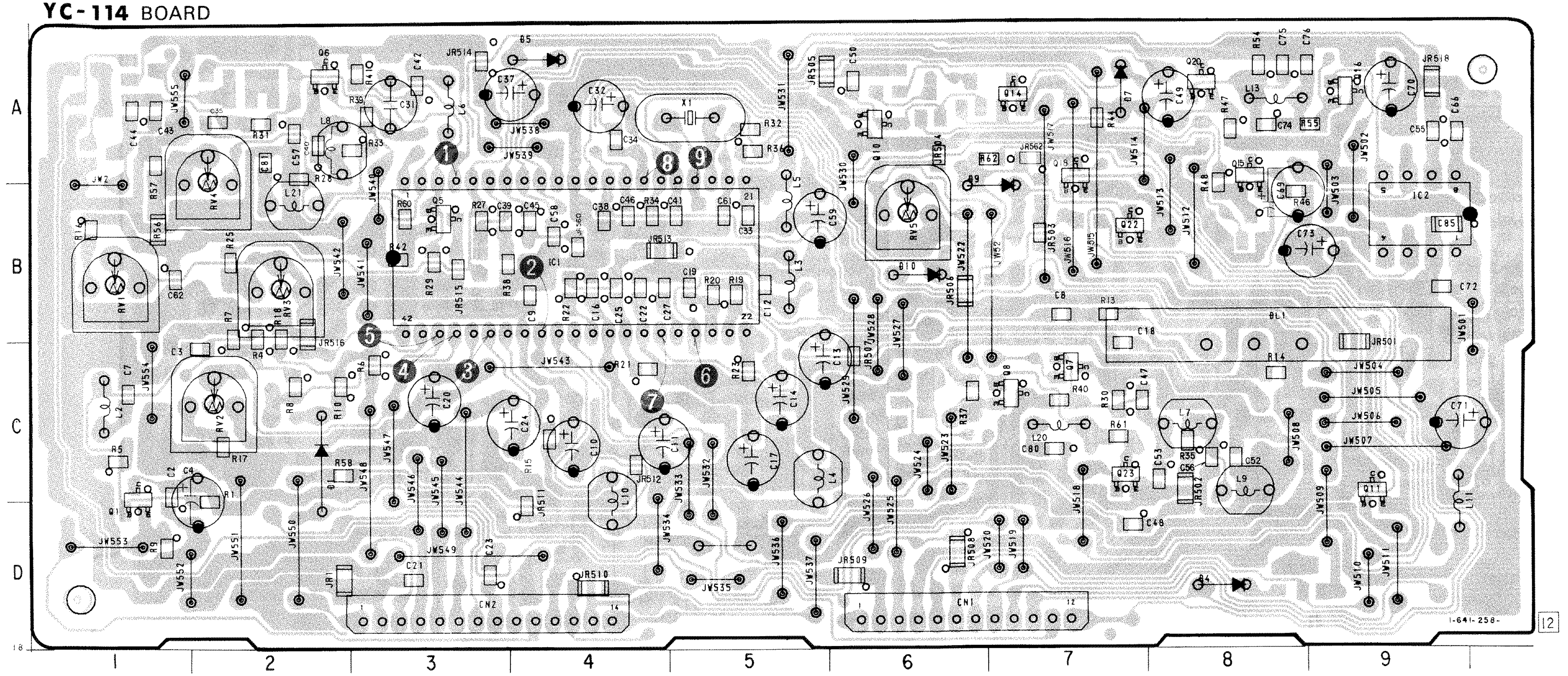
< TRANSISTOR >

Q260	8-729-103-72	TRANSISTOR	2SD1005-BV	(SLV-696HF)
Q801	8-729-422-28	TRANSISTOR	2SD601A-R	
Q802	8-729-422-28	TRANSISTOR	2SD601A-R	
Q803	8-729-424-18	TRANSISTOR	UN2113	
Q804	8-729-422-28	TRANSISTOR	2SD601A-R	
Q805	8-729-422-37	TRANSISTOR	2SB709A-R	
Q806	8-729-422-37	TRANSISTOR	2SB709A-R	
Q807	8-729-422-28	TRANSISTOR	2SD601A-R	
Q808	8-729-421-19	TRANSISTOR	UN2213	
Q809	8-729-422-28	TRANSISTOR	2SD601A-R	
Q810	8-729-421-19	TRANSISTOR	UN2213	
Q811	8-729-301-98	TRANSISTOR	2SB1000A-L	
Q814	8-729-421-19	TRANSISTOR	UN2213	
Q890	8-729-216-22	TRANSISTOR	2SA1162-G	(SLV-696HF)
Q891	8-729-216-22	TRANSISTOR	2SA1162-G	(SLV-696HF)
Q892	8-729-421-19	TRANSISTOR	UN2213	(SLV-696HF)

YC-114 (VIDEO PROCESS) CG-14 (DATA SCREEN) PRINTED WIRING BOARDS

—Ref. No. YC-114 BOARD: 1,000 series, CG-14 BOARD: 3,000 series—

YC-114 BOARD



< DIODE >	
D001 8-719-911-19 DIODE 1SS119	
D004 8-719-911-19 DIODE 1SS119	
D005 8-719-911-19 DIODE 1SS119	
D007 8-719-911-19 DIODE 1SS119	
D009 8-719-911-19 DIODE 1SS119	
D010 8-719-911-19 DIODE 1SS119	

< DIODE >

D001	8-719-911-19	DIODE	1SS119
D004	8-719-911-19	DIODE	1SS119
D005	8-719-911-19	DIODE	1SS119
D007	8-719-911-19	DIODE	1SS119
D009	8-719-911-19	DIODE	1SS119
D010	8-719-911-19	DIODE	1SS119

< IC >

IC001	8-759-046-76	IC	LA7396
IC002	8-759-821-50	IC	LC8991

< TRANSISTOR >

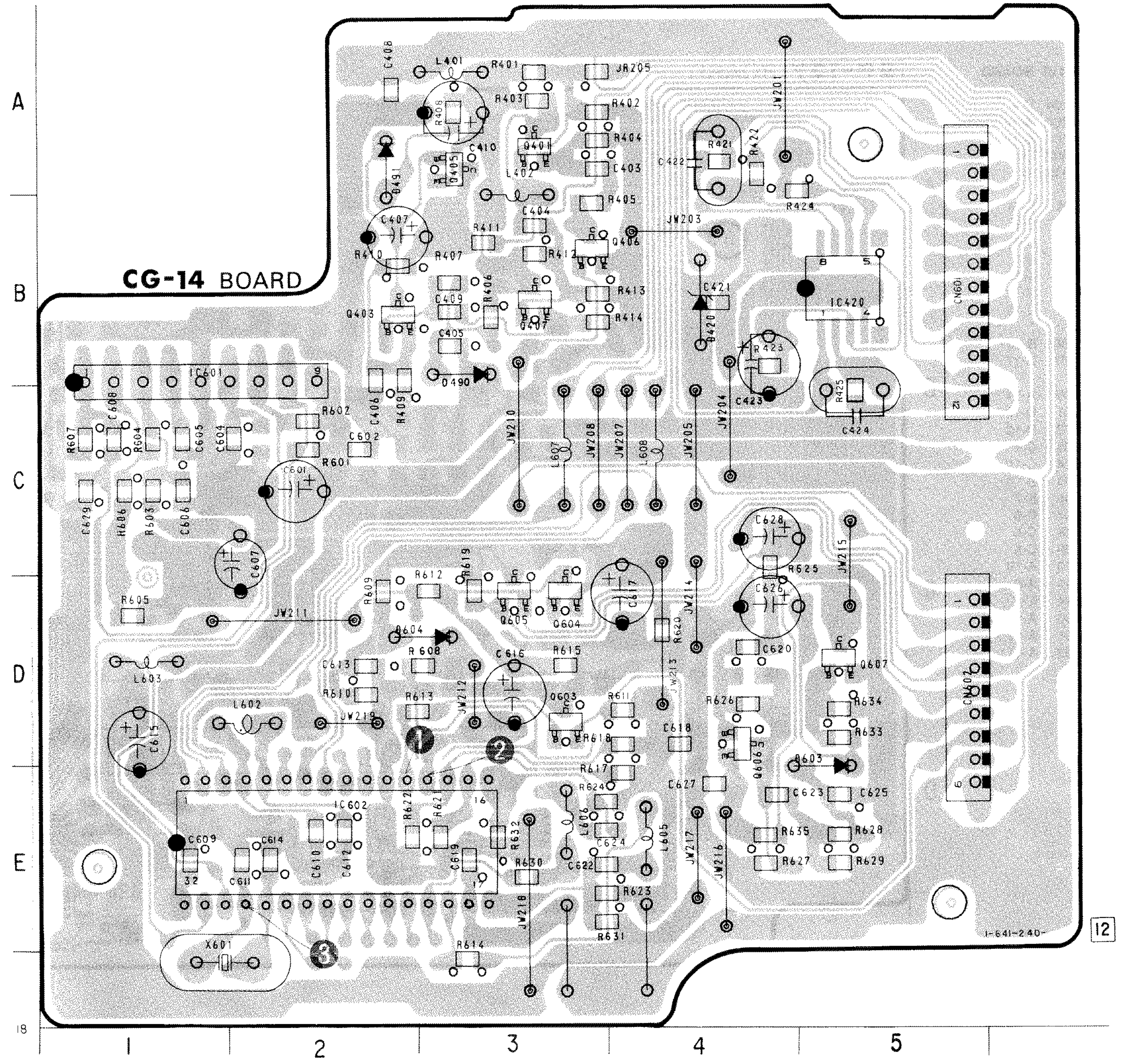
Q001	8-729-422-27	TRANSISTOR	2SD601A-Q
Q005	8-729-422-36	TRANSISTOR	2SB709A-Q
Q006	8-729-422-36	TRANSISTOR	2SB709A-Q
Q007	8-729-422-27	TRANSISTOR	2SD601A-Q
Q008	8-729-422-36	TRANSISTOR	2SB709A-Q
Q010	8-729-421-19	TRANSISTOR	UN2213
Q011	8-729-424-56	TRANSISTOR	UN211L
Q014	8-729-424-46	TRANSISTOR	UN211E
Q015	8-729-421-19	TRANSISTOR	UN2213
Q016	8-729-422-27	TRANSISTOR	2SD601A-Q
Q018	8-729-421-19	TRANSISTOR	UN2213
Q020	8-729-422-36	TRANSISTOR	2SB709A-Q
Q022	8-729-421-19	TRANSISTOR	UN2213
Q023	8-729-421-19	TRANSISTOR	UN2213

CG-14 BOARD

CN601	B-5
CN602	D-5
D420	B-4
D490	B-3
D491	A-2
D603	E-5
D604	D-3
IC420	B-5
IC601	B-1
IC602	E-2
Q401	A-3
Q403	B-2
Q405	A-3
Q406	B-4
Q407	B-3
Q603	D-3
Q604	D-3
Q605	D-3
Q606	D-4
Q607	D-5

YC-114 BOARD

CN001	D-6
CN002	D-3
D001	C-2
D004	D-8
D005	A-4
D007	A-7
D009	B-7
D010	B-6
IC001	B-4
IC002	B-9
Q001	D-1
Q005	B-3
Q006	A-2
Q007	C-7
Q008	C-7
Q010	A-6
Q011	C-9
Q014	A-7
Q015	A-8
Q016	A-9
Q018	A-7
Q020	A-8
Q022	B-7
Q023	C-7
RV001	B-1
RV002	C-2
RV003	B-2
RV004	A-2
RV005	B-6



< DIODE>

D420	8-719-101-43	DIODE	RD4.3E-L2
D490	8-719-911-19	DIODE	1SS119
D491	8-719-911-19	DIODE	1SS119
D603	8-719-911-19	DIODE	1SS119
D604	8-719-911-19	DIODE	1SS119

< IC >

IC420	8-759-908-17	IC	TL082CPS
IC601	8-759-996-03	IC	LVA519S
IC602	8-759-056-22	IC	M50555-058SP

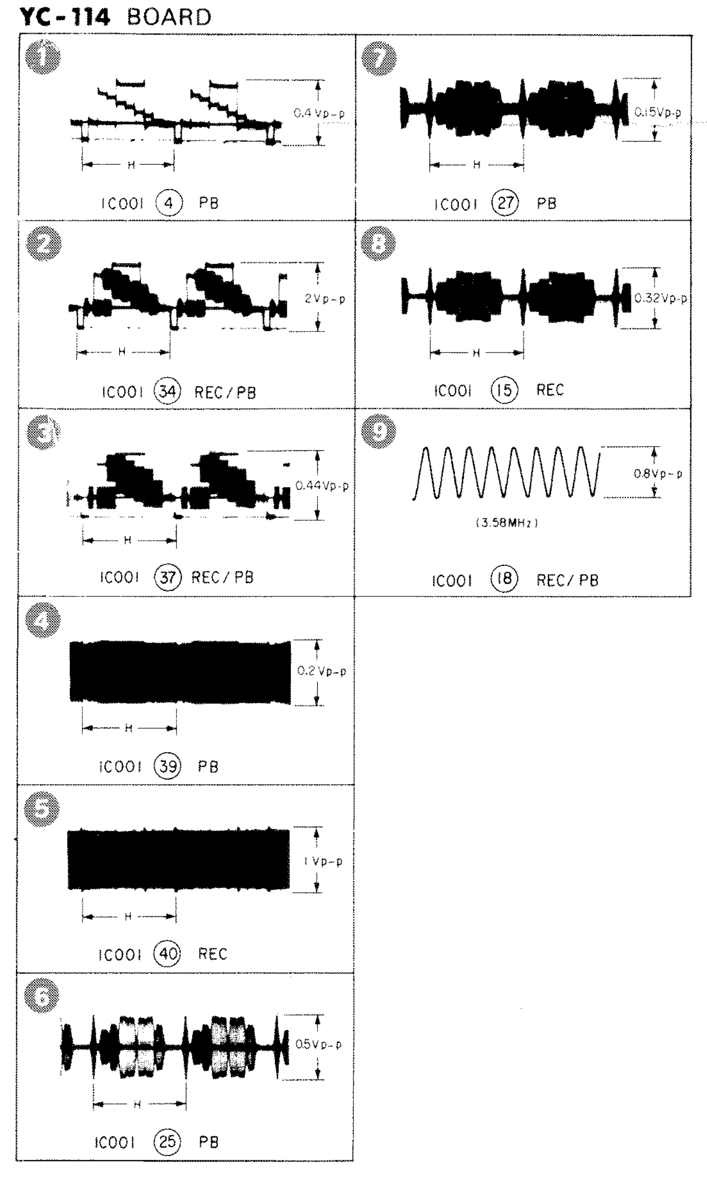
< TRANSISTOR >

Q401	8-729-422-28	TRANSISTOR	2SD601A-R
Q403	8-729-422-28	TRANSISTOR	2SD601A-R
Q405	8-729-422-37	TRANSISTOR	2SB709A-R
Q406	8-729-421-19	TRANSISTOR	UN2213
Q407	8-729-422-28	TRANSISTOR	2SD601A-R
Q603	8-729-422-37	TRANSISTOR	2SB709A-R
Q604	8-729-424-18	TRANSISTOR	UN2113
Q605	8-729-422-28	TRANSISTOR	2SD601A-R
Q606	8-729-422-37	TRANSISTOR	2SB709A-R
Q607	8-729-422-28	TRANSISTOR	2SD601A-R

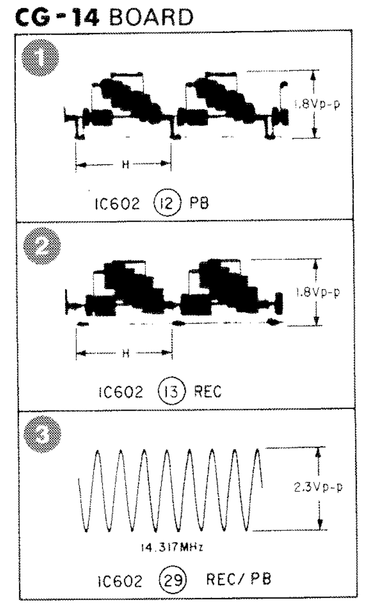
YC-114 (VIDEO PROCESS) CG-14 (DATA SCREEN) SCHEMATIC DIAGRAMS

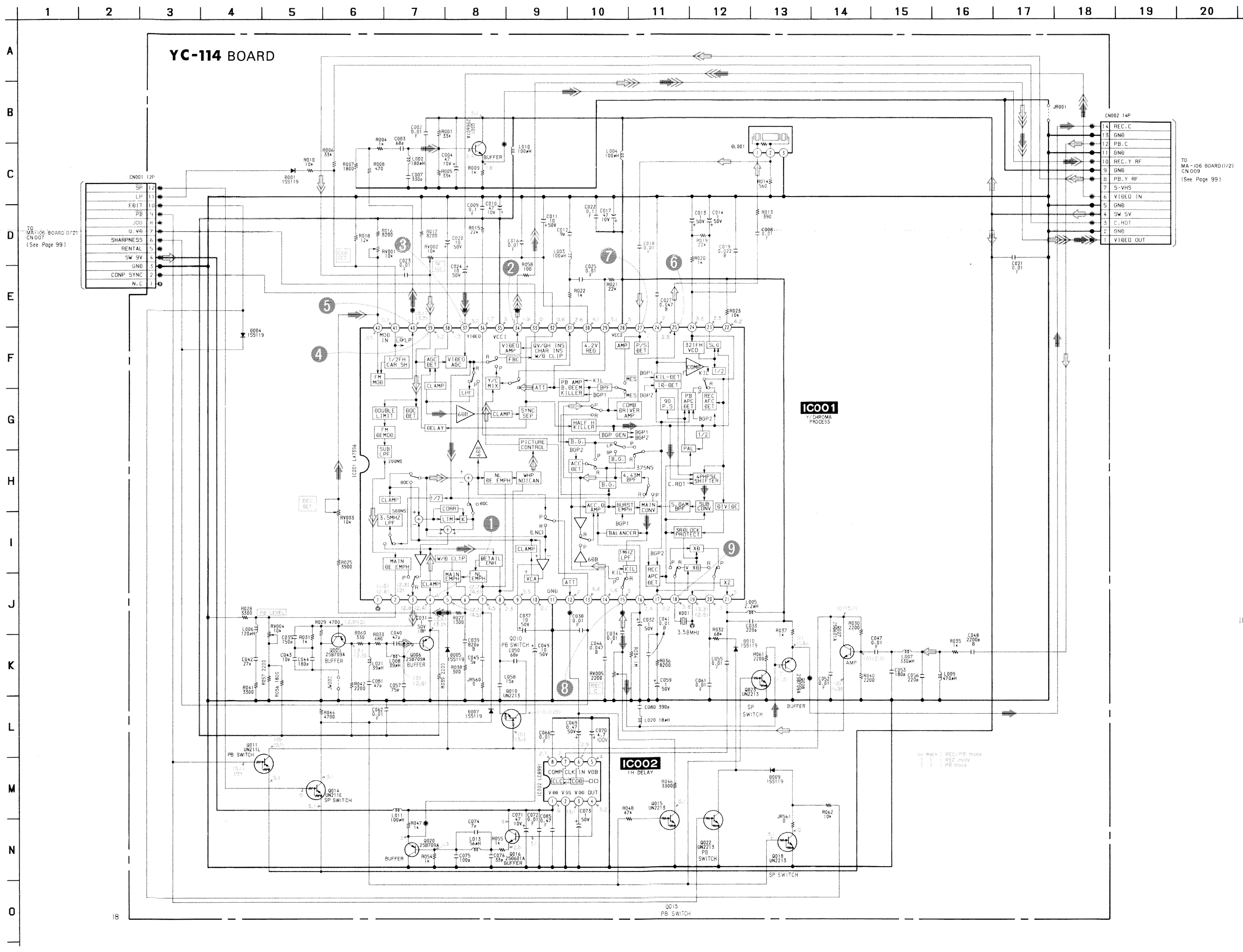
—Ref. No. YC-114 BOARD: 1,000 series, CG-14 BOARD: 3,000 series—

YC-114 BOARD

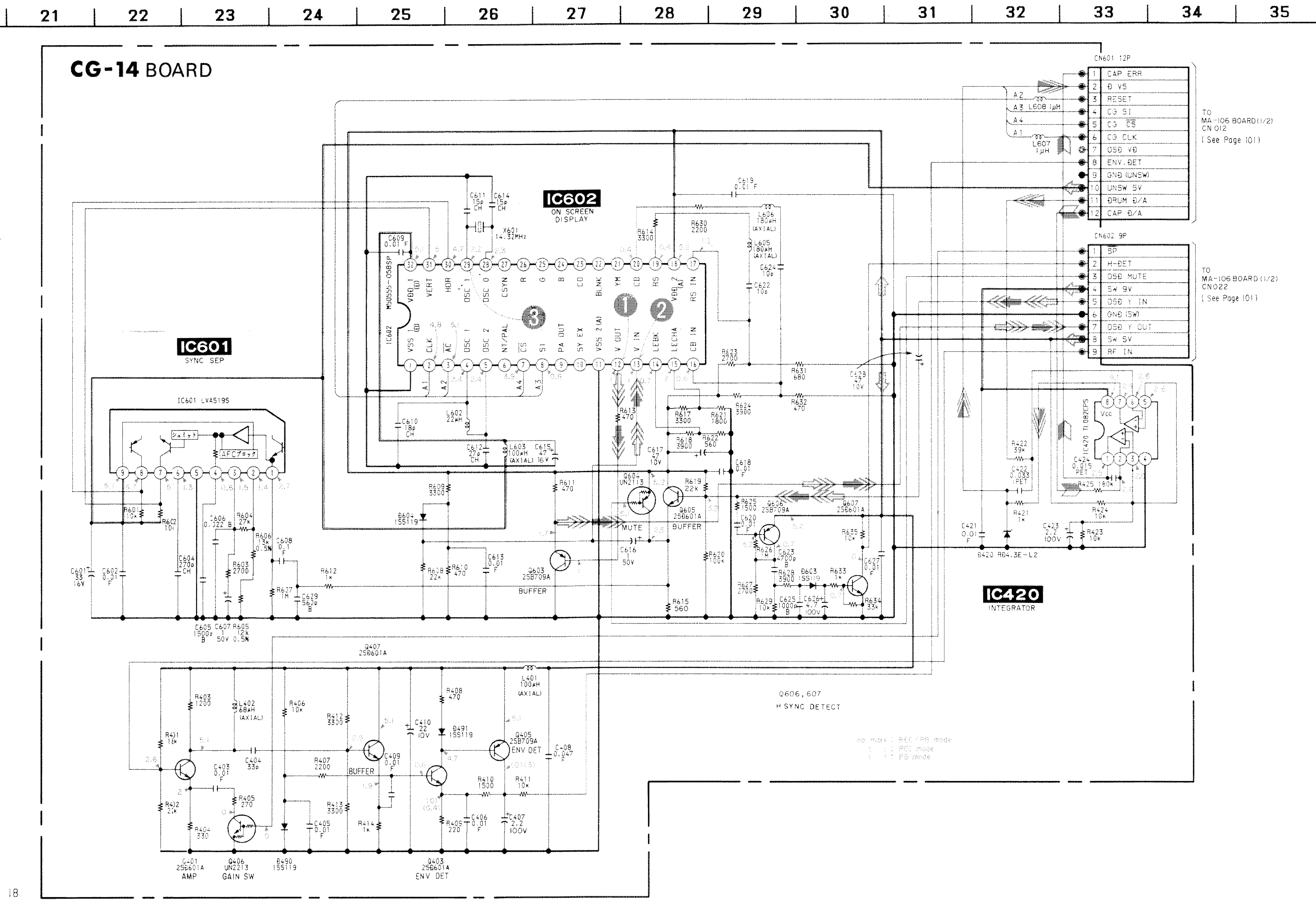


CG-14 BOARD





YC-114 BOARD
CN001 12P
SP
LP
EDIT
PB
JOG
Q.VD
SHARPNESS
RENTAL
SW 9V
GND
CONP SYNC
N.C
TO MA-106 BOARD (1/2) CN007 (See Page 99)
CN002 14P
REC.C
GND
PB.C
GND
REC.Y RF
GND
PB.Y RF
S-VHS
VIDEO IN
GND
SW 5V
C.ROT
GND
VIDEO OUT
TO MA-106 BOARD (1/2) CN009 (See Page 99)
JR001
IC001
Y/CHROMA PROCESS
IC002
1H DELAY
BUFFER
PB SWITCH
SP SWITCH
AMP



CG-14 BOARD
IC602
ON SCREEN DISPLAY
IC601
SYNC SEP
IC420
INTEGRATOR
CN601 12P
CAP ERR
D VS
RESET
CG SI
CG CS
CG CLK
OSD VD
ENV.DET
GND (UNSW)
UNSW 5V
DRUM D/A
CAP D/A
TO MA-106 BOARD (1/2) CN012 (See Page 101)
CN602 9P
SP
H-DET
OSD MUTE
SW 9V
OSD Y IN
GND (SW)
OSD Y OUT
SW 5V
RF IN
TO MA-106 BOARD (1/2) CN022 (See Page 101)
L608 1μH
L607 1μH
MUTE
BUFFER
ENV DET
AMP
GAIN SW
Q606, 607 H SYNC DETECT

·SIGNAL PATH

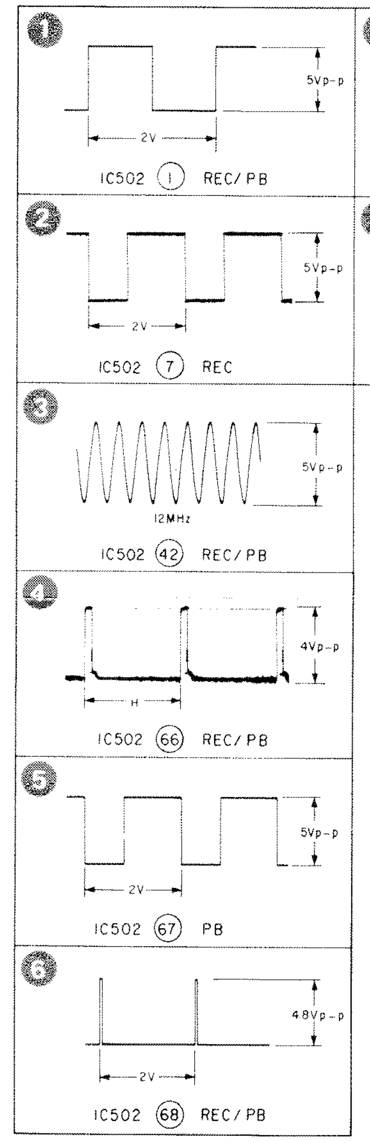
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	
PB	⇨	⇨>	⇨>>	

	REC	REC/PB	PB
Drum speed servo			
Drum pilase serbo			
Drum servo (speed and phase)		≫	
Capstan speed servo		➡	
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

MA-106 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

– Ref. No. MA-106 BOARD : 2,000 series –

MA-106 BOARD



M902
CAPSTAN MOTOR BOARD
M901
DRUM MOTOR BOARD
MA-106 BOARD (1/2)
IC402
CTL CONT/WAVE SHAPER/INTEGRATOR
IC501
CAPSTAN/LOADING MOTOR DRIVE
IC502
SERVO/SYSTEM CONTROL
IC301
AUDIO REC/PB AMP
IC304
LEVEL METER DRIVE

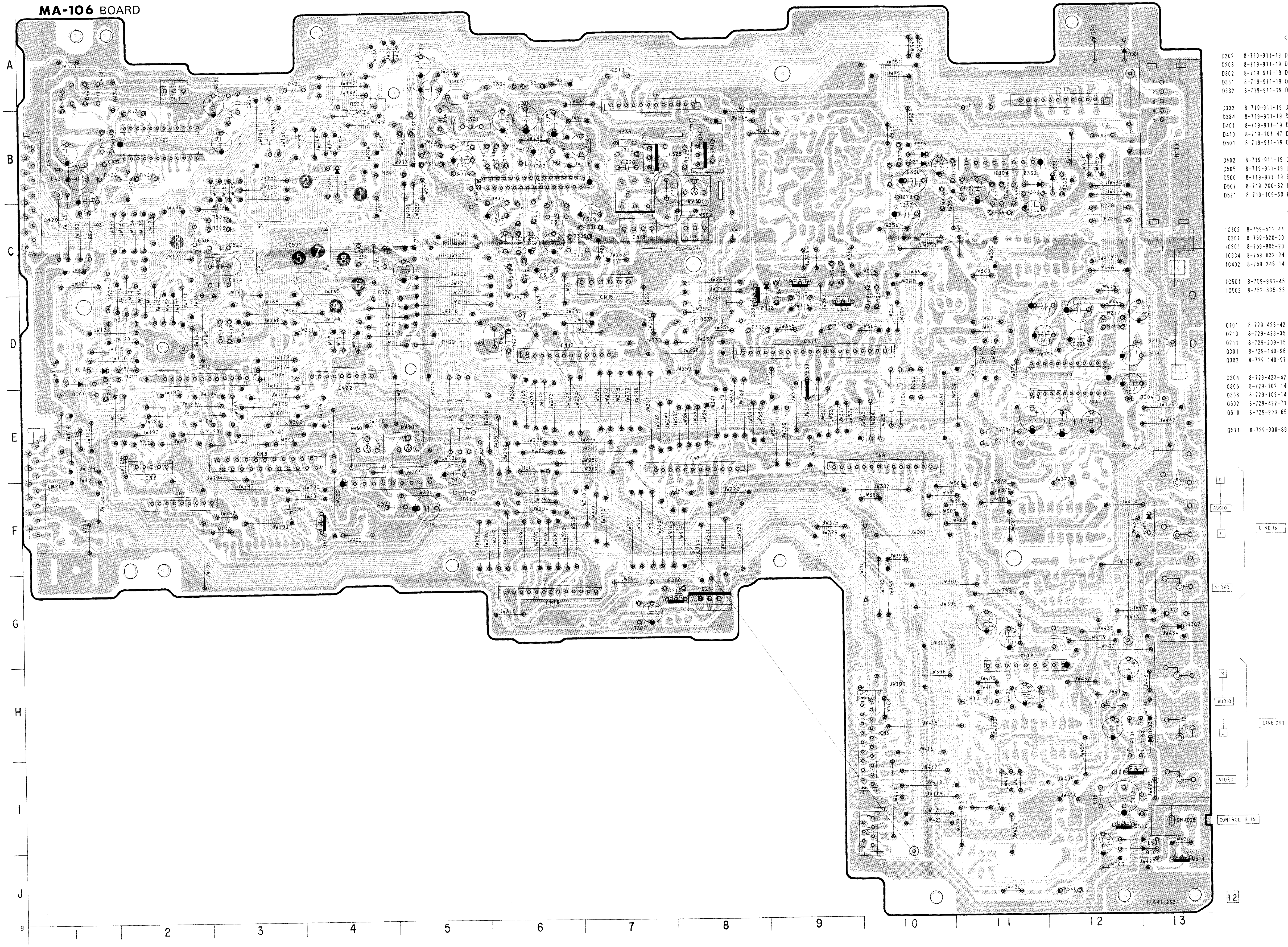
·**SIGNAL PATH**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡⋙	➡
PB			⇨⋙	⇨

	REC	REC/PB	PB
Drum speed servo		▷	
Drum pilase serbo		⊳	
Drum servo (speed and phase)		⋙	
Capstan speed servo		➢	
Capstan phase servo		➢≫	
Capstan servo (speed and phase)			
Ref. signal	➤		

MA-106 (SERVO/SYSTEM CONTROL) PRINTED WIRING BOARD

—Ref. No. MA-106 BOARD: 2,000 series—



MA-106 BOARD

CN001	F-2
CN002	E-1
CN003	E-3
CN005	H-10
CN006	I-10
CN007	E-8
CN008	A-2
CN009	E-10
CN010	D-6
CN011	D-9
CN012	D-2
CN013	C-7
CN014	C-8
CN015	C-7
CN016	B-7
CN017	B-12
CN018	G-6
CN020	B-1
CN021	E-1
CN022	D-4
D202	G-13
D203	H-13
D302	D-9
D331	B-12
D332	B-11
D333	B-10
D334	B-10
D401	D-1
D410	D-1
D501	J-13
D502	J-13
D505	F-13
D506	B-4
D507	E-6
D521	A-12
IC102	H-11
IC201	E-12
IC301	B-6
IC302	C-9
IC304	B-11
IC402	B-2
IC501	F-4
IC502	C-3
Q101	I-12
Q210	G-8
Q211	G-8
Q301	B-7
Q302	B-8
Q304	D-8
Q305	D-9
Q306	C-9
Q502	F-4
Q510	I-12
Q511	J-13
RV301	B-8
RV501	E-4
RV502	E-5

< DIODE >

D202	8-719-911-19	DIODE	1SS119	
D203	8-719-911-19	DIODE	1SS119	
D302	8-719-911-19	DIODE	1SS119	
D331	8-719-911-19	DIODE	1SS119	
D332	8-719-911-19	DIODE	1SS119	
D333	8-719-911-19	DIODE	1SS119	
D334	8-719-911-19	DIODE	1SS119	
D401	8-719-911-19	DIODE	1SS119	
D410	8-719-101-47	DIODE	RD4.7E-L2	
D501	8-719-911-19	DIODE	1SS119	
D502	8-719-911-19	DIODE	1SS119	
D505	8-719-911-19	DIODE	1SS119	
D506	8-719-911-19	DIODE	1SS119	
D507	8-719-200-82	DIODE	11ES2	
D521	8-719-109-60	DIODE	RD2.7ES-B2	

< IC >

IC102	8-759-511-44	IC	LVA522SA	
IC201	8-759-520-50	IC	BH7733S	
IC301	8-759-805-20	IC	LA7297	
IC304	8-759-632-94	IC	M5223L	
IC402	8-759-246-14	IC	TA8823N	
IC501	8-759-983-45	IC	BA6238A	
IC502	8-752-835-23	IC	CXP80724-027Q	

< TRANSISTOR >

Q101	8-729-423-42	TRANSISTOR	2SA1309A-R	
Q210	8-729-423-35	TRANSISTOR	2SC3311A-R	
Q211	8-729-209-15	TRANSISTOR	2SD2012	
Q301	8-729-140-96	TRANSISTOR	2SD774-34	
Q302	8-729-140-97	TRANSISTOR	2SB734-34	(SLV-696HF)
Q304	8-729-423-42	TRANSISTOR	2SA1309A-R	
Q305	8-729-102-14	TRANSISTOR	2SD1021-F	
Q306	8-729-102-14	TRANSISTOR	2SD1021-F	
Q502	8-729-422-71	TRANSISTOR	UN411L	
Q510	8-729-900-65	TRANSISTOR	DTA144ES	
Q511	8-729-900-89	TRANSISTOR	DTC144ES	

MA-106 (AUDIO/VIDEO SWITCH) PRINTED WIRING BOARD

—Ref. No. MA-106 BOARD: 2,000 series—

MA-106 BOARD

CN001	F-2
CN002	E-1
CN003	E-3
CN005	H-10
CN006	I-10
CN007	E-8
CN008	A-2
CN009	E-10
CN010	D-6
CN011	D-9
CN012	D-2
CN013	C-7
CN014	C-8
CN015	C-7
CN016	B-7
CN017	B-12
CN018	G-6
CN020	B-1
CN021	E-1
CN022	D-4
D202	G-13
D203	H-13
D302	D-9
D331	B-12
D332	B-11
D333	B-10
D334	B-10
D401	D-1
D410	D-1
D501	J-13
D502	J-13
D505	F-13
D506	B-4
D507	E-6
D521	A-12
IC102	H-11
IC201	E-12
IC301	B-6
IC302	C-9
IC304	B-11
IC402	B-2
IC501	F-4
IC502	C-3
Q101	I-12
Q210	G-8
Q211	G-8
Q301	B-7
Q302	B-8
Q304	D-8
Q305	D-9
Q306	C-9
Q502	F-4
Q510	I-12
Q511	J-13
RV301	B-8
RV501	E-4
RV502	E-5

< DIODE >

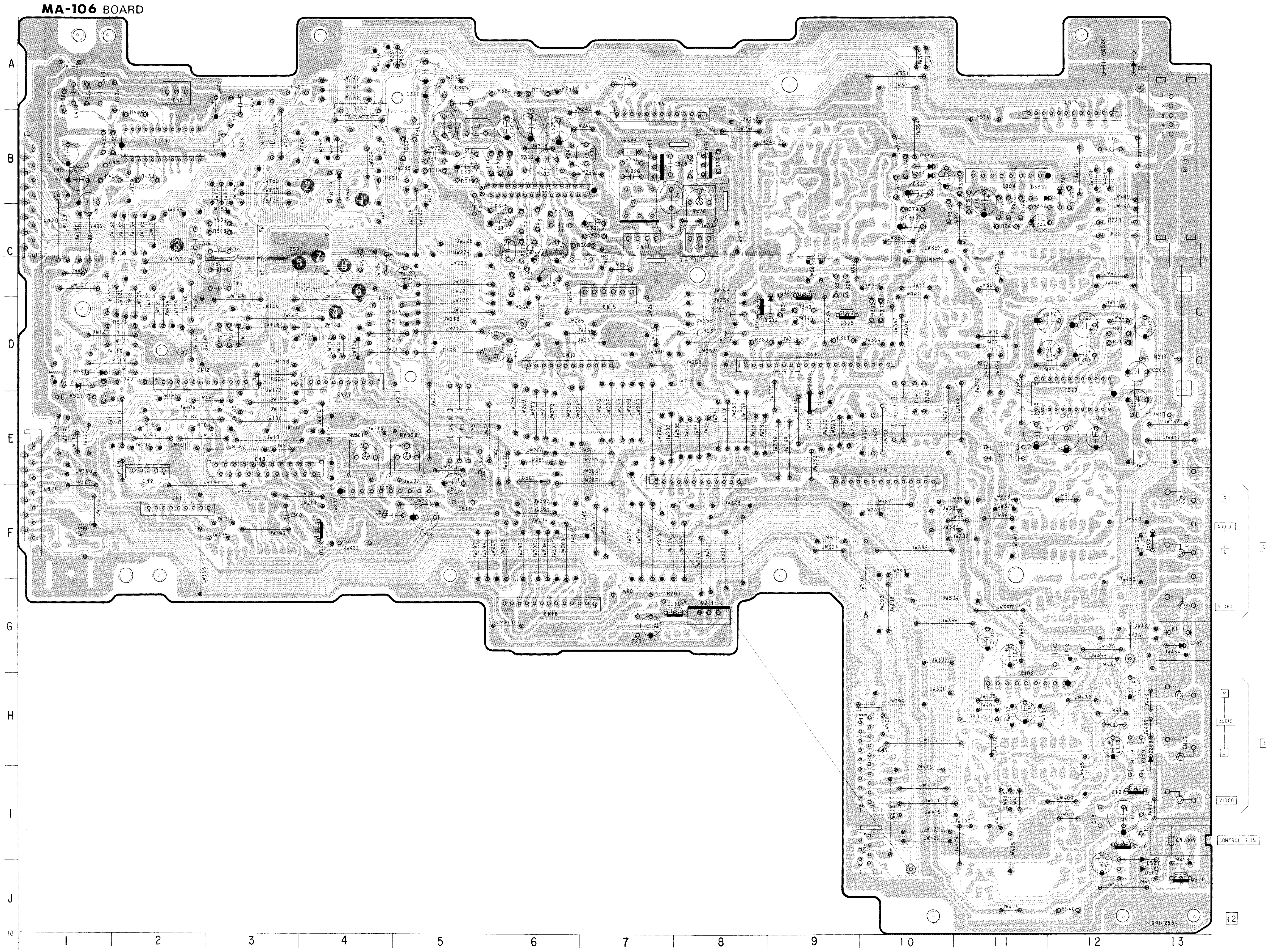
D202	8-719-911-19	DIODE	1SS119
D203	8-719-911-19	DIODE	1SS119
D302	8-719-911-19	DIODE	1SS119
D331	8-719-911-19	DIODE	1SS119
D332	8-719-911-19	DIODE	1SS119
D333	8-719-911-19	DIODE	1SS119
D334	8-719-911-19	DIODE	1SS119
D401	8-719-911-19	DIODE	1SS119
D410	8-719-101-47	DIODE	RD4.7E-L2
D501	8-719-911-19	DIODE	1SS119
D502	8-719-911-19	DIODE	1SS119
D505	8-719-911-19	DIODE	1SS119
D506	8-719-911-19	DIODE	1SS119
D507	8-719-200-82	DIODE	11ES2
D521	8-719-109-60	DIODE	RD2.7ES-B2

< IC >

IC102	8-759-511-44	IC	LVA522SA
IC201	8-759-520-50	IC	BH7733S
IC301	8-759-805-20	IC	LA7297
IC304	8-759-632-94	IC	M5223L
IC402	8-759-246-14	IC	TA8823N
IC501	8-759-983-45	IC	BA6238A
IC502	8-752-835-23	IC	CXP80724-027Q

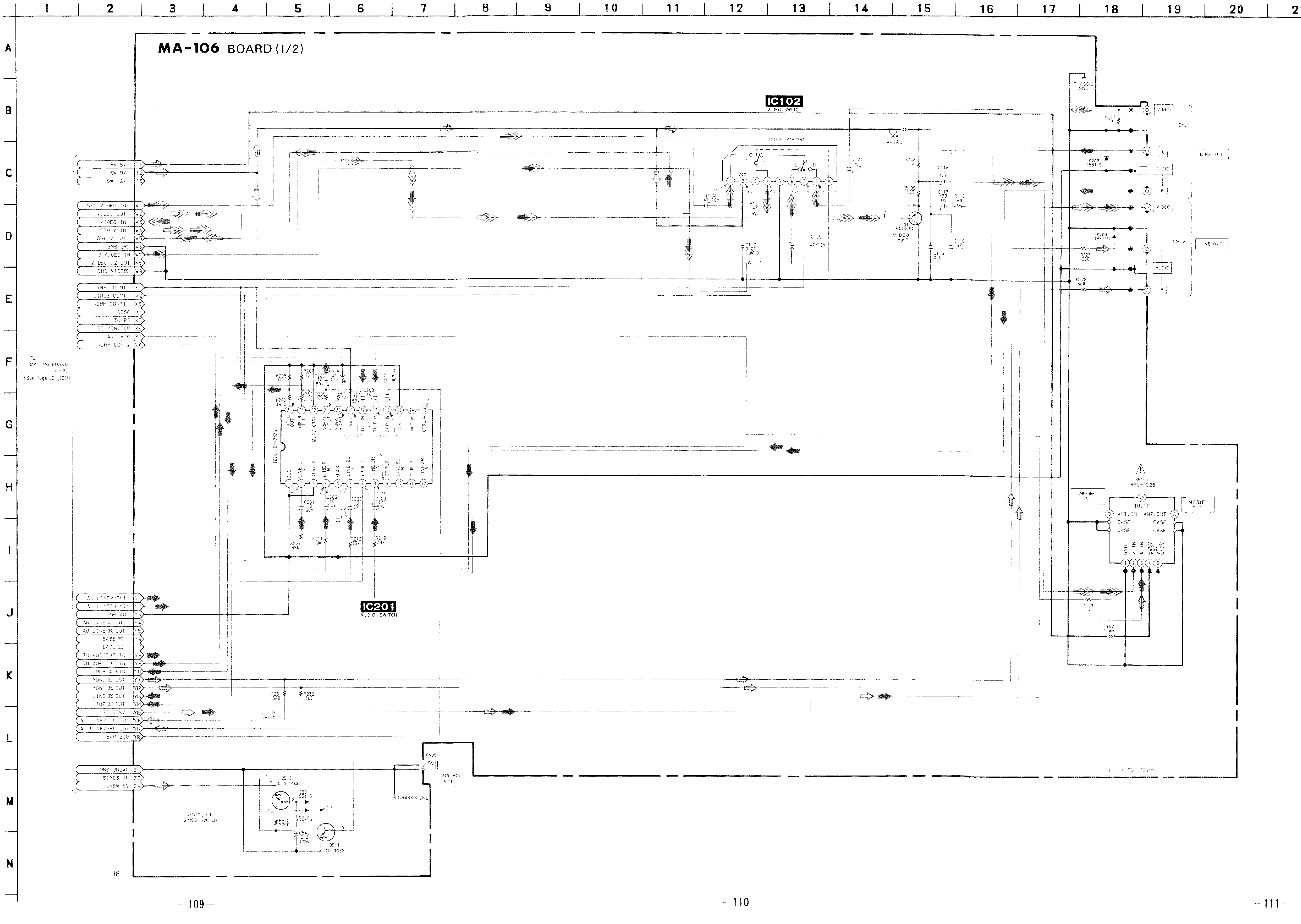
< TRANSISTOR >

Q101	8-729-423-42	TRANSISTOR	2SA1309A-R	
Q210	8-729-423-35	TRANSISTOR	2SC3311A-R	
Q211	8-729-209-15	TRANSISTOR	2SD2012	
Q301	8-729-140-96	TRANSISTOR	2SD774-34	
Q302	8-729-140-97	TRANSISTOR	2SB734-34	(SLV-696HF)
Q304	8-729-423-42	TRANSISTOR	2SA1309A-R	
Q305	8-729-102-14	TRANSISTOR	2SD1021-F	
Q306	8-729-102-14	TRANSISTOR	2SD1021-F	
Q502	8-729-422-71	TRANSISTOR	UN411L	
Q510	8-729-900-65	TRANSISTOR	DTA144ES	
Q511	8-729-900-89	TRANSISTOR	DTC144ES	


MA-106 BOARD
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
CN16
CN17
CN10
CN11
CN12
CN22
CN3
CN2
CN1
CN7
CN9
CN18
CN5
CN13
CN14
CN15
CN20
CN21
IC402
IC502
IC201
IC102
IC304
RV301
RV501
RV502
R
AUDIO
L
VIDEO
LINE IN 1
LINE OUT
CONTROL S IN
1-641-253-
12

MA-106 (AUDIO/ VIDEO SWITCH) SCHEMATIC DIAGRAM

—Ref. No. MA-106 BOARD: 2,000 series—



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
A B C D E F G H I J K L M N
MA-106 BOARD (1/2)
TO MA-106 BOARD (1/2) (See Page 101,102)
SW 5V T1
SW 9V T2
SW 12V T3
LINE2 VIDEO IN W1
VIDEO OUT W2
VIDEO IN W3
OSD V IN W4
OSD V OUT W5
GND (SW) W6
TU VIDEO IN W7
VIDEO L2 OUT W8
GND (VIDEO) W9
LINE1 CONT X1
LINE2 CONT X2
NORM CONT1 X3
DESC X4
TU/BS X5
BS MONITOR X6
ANT VTR X7
NORM CONT2 X8
AU LINE2 (R) IN Y1
AU LINE2 (L) IN Y2
GND (AU) Y3
AU LINE (L) OUT Y4
AU LINE (R) OUT Y5
BASS (R) Y6
BASS (L) Y7
TU AUDIO (R) IN Y8
TU AUDIO (L) IN Y9
NOR AUDIO Y10
MONI (L) OUT Y11
MONI (R) OUT Y12
LINE (R) OUT Y13
LINE (L) OUT Y14
RF CONV Y15
AU LINE2 (L) OUT Y16
AU LINE2 (R) OUT Y17
SAP SIG Y18
GND (UNSW) Z1
SIRCS IN Z2
UNSW 5V Z3
IC102
VIDEO SWITCH
IC102 LVA5225A
Vcc
H L
C106 47 10V
R101 47
C104 47 10V
C112 0.01
JW101
C109 47/10V
L101 100μH AXIAL
R108 120
R109 100
C116 47 10V
C117 470 10V
R110 68
Q101 2SA1309A VIDEO AMP
C115 0.01 F
C118 47 10V
CHASSIS GND
R111 75
D202 1SS119
D203 1SS119
R227 560
R228 560
CNJ1
CNJ2
VIDEO
AUDIO
L
R
LINE IN1
LINE OUT
IC201 BH7733S
IC201
AUDIO SWITCH
HIFI L OUT
HIFI R OUT
MUTE CTRL
NOMAL L OUT
NOMAL R OUT
Vcc
TU L IN
TU R IN
SAP IN
CTRL 5
MIC IN
CTRL 4
SUB
LINE L IN
CTRL 6
LINE R IN
BIAS
LINE 2L IN
CTRL 1
LINE 2R IN
CTRL 2
LINE 3L IN
CTRL 3
LINE 3R IN
R208 10k
R207 10k
C202 10 50V
C205 47 10V
C212 10/50V
R262 3900
R260 3300
R205 47k
R212 47k
C207 10 50V
C208 10 50V
C201 10 50V
C203 10 50V
C204 10 50V
C206 10 50V
C209 10 50V
R204 39k
R211 39k
R213 39k
R218 39k
RF101 RFU-1025
VHF/UHF IN
VHF/UHF OUT
TU.RF
ANT.IN
ANT.OUT
CASE
GND
V.IN
A.IN
SW5V
TV/VTR/
UNSV
R117 1k
L102 10μH
R231 560
R232 560
JW205
CNJ5
CONTROL S IN
CHASSIS GND
Q510 DTA144ES
D501 1SS119
D502 1SS119
R540 2200
C540 2.2 100V
Q511 DTC144ES
Q510,511 SIRCS SWITCH

·SIGNAL PATH

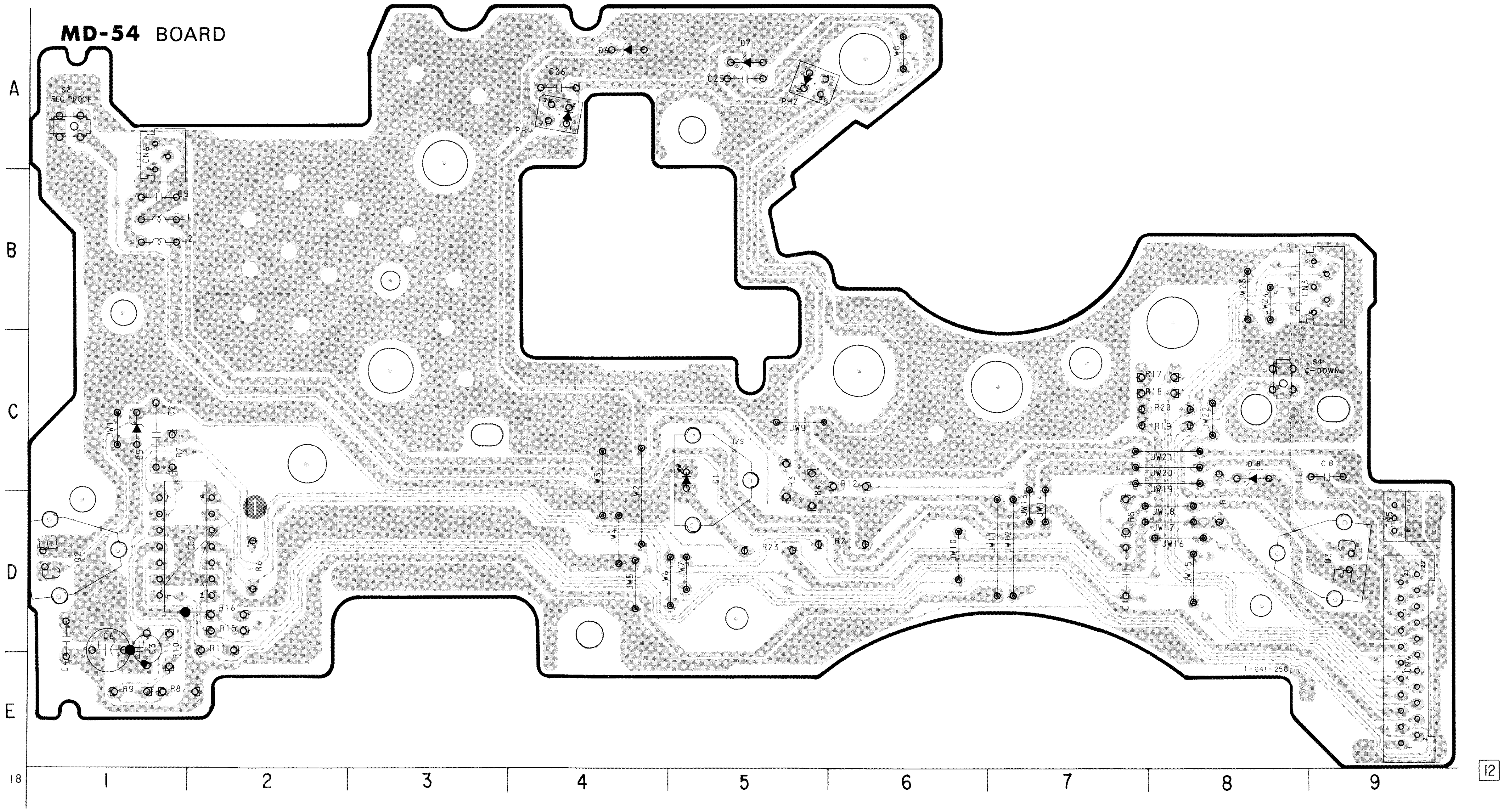
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡》	➡
PB			⇨》	⇨

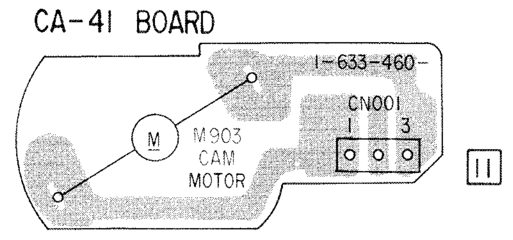
MD-54 (MOTOR DRIVE) CA-41 (CAM MOTOR) PRINTED WIRING BOARDS

—Ref. No. MD-54 BOARD: 3,000 series, CA-41 BOARD: 5,000 series—

MD-54 BOARD

CN003	B-9
CN004	E-9
CN005	D-9
CN006	A-1
D001	C-5
D005	C-1
D006	A-4
D007	A-5
D008	C-8
IC002	D-1
Q002	D-1
Q003	D-9

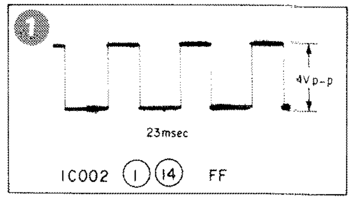

MD-54 BOARD
A
B
C
D
E
S2
REC PROOF
CN6
C9
L1
L2
D6
D7
C26
C25
PH1
PH2
JW8
JW23
JW24
CN3
S4
C-DOWN
R17
R18
R20
R19
JW22
JW21
JW20
JW19
JW18
JW17
JW16
JW15
D8
C8
CN5
Q3
CN4
1-641-256-
JW1
D5
C2
R7
IC2
R6
R16
R15
R11
R10
Q2
C6
C3
C4
R9
R8
JW3
JW2
JW4
JW5
JW6
JW7
T/S
D1
JW9
R3
R4
R12
R23
R2
JW10
JW11
JW12
JW13
JW14
R1
R5
18
1
2
3
4
5
6
7
8
9
12

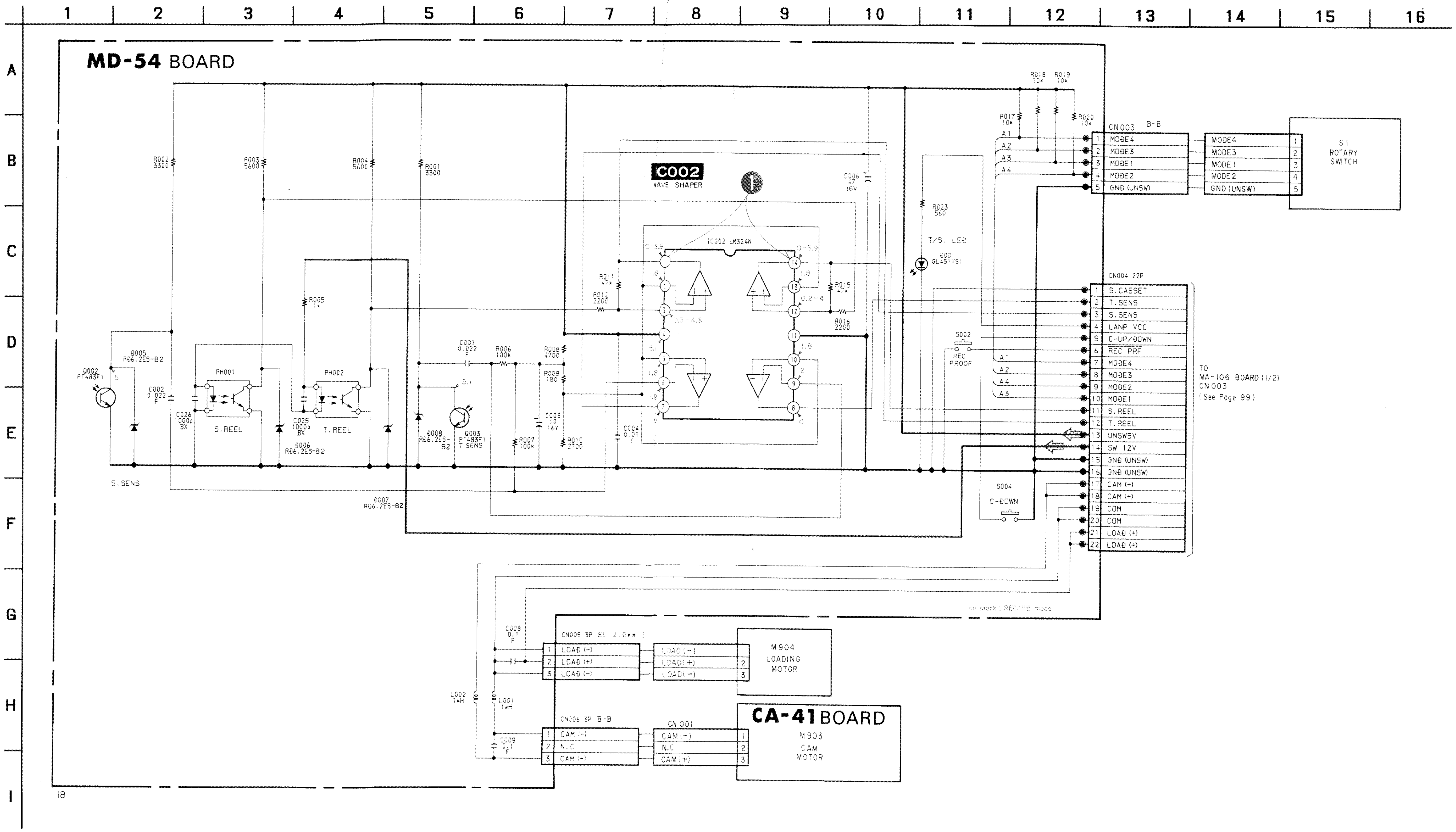

CA-41 BOARD
1-633-460-
CN001
1
3
M
M903
CAM
MOTOR
11

MD-54 (MOTOR DRIVE) CA-41 (CAM MOTOR) SCHEMATIC DIAGRAMS

—Ref. No. MD-54 BOARD: 3,000 series, CA-41 BOARD: 5,000 series—

MD-54 BOARD



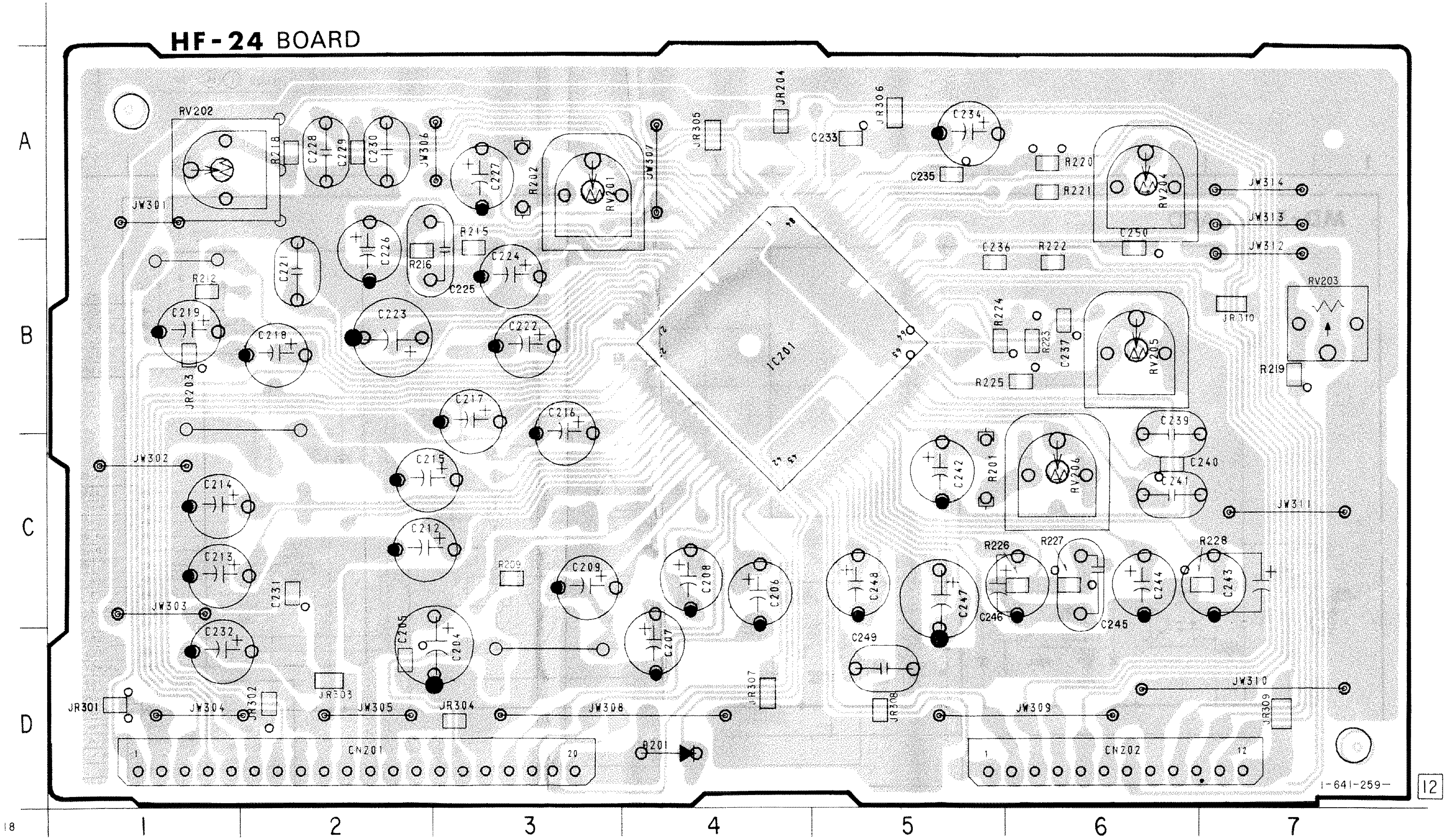

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
MD-54 BOARD
R002 3300
R003 5600
R004 5600
R001 3300
IC002
WAVE SHAPER
①
IC002 LM324N
0-3.9
1.8
0.3-4.3
5.1
1.9
0
0-3.9
0.2-4
2
R011 47k
R012 2200
R015 47k
R016 2200
C006 47 16V
R018 10k
R019 10k
R017 10k
R020 10k
A1
A2
A3
A4
CN003 B-B
MODE4
MODE3
MODE1
MODE2
GND (UNSW)
S1 ROTARY SWITCH
R023 560
T/S. LED
D001 GL451VS1
R005 1k
D005 R06.2ES-B2
Q002 PT483F1
C002 0.022 F
PH001
C026 1000p BX
S.REEL
PH002
C025 1000p BX
T.REEL
D006 R06.2ES-B2
S.SENS
D007 R06.2ES-B2
C001 0.022 F
R006 100k
R008 4700
R009 180
D008 R06.2ES-B2
Q003 PT483F1 T SENS
R007 100k
C003 10 16V
R010 2700
C004 0.01 F
S002 REC PROOF
S004 C-DOWN
CN004 22P
1 S.CASSET
2 T.SENS
3 S.SENS
4 LANP VCC
5 C-UP/DOWN
6 REC PRF
7 MODE4
8 MODE3
9 MODE2
10 MODE1
11 S.REEL
12 T.REEL
13 UNSW5V
14 SW 12V
15 GND (UNSW)
16 GND (UNSW)
17 CAM (+)
18 CAM (+)
19 COM
20 COM
21 LOAD (+)
22 LOAD (+)
TO MA-106 BOARD (1/2) CN003 (See Page 99)
no mark : REC/PB mode
C008 0.1 F
CN005 3P EL 2.0** 1
LOAD (-)
LOAD (+)
LOAD (-)
M904 LOADING MOTOR
L002 1μH
L001 1μH
CN006 3P B-B
CAM (-)
N.C
CAM (+)
C009 0.1 F
CN001
CA-41 BOARD
M903 CAM MOTOR
18

HF-24 (AUDIO PROCESS) PRINTED WIRING BOARD

– Ref. No. HF-24 BOARD 3,000 series –

HF-24 BOARD

CN201	D-2
CN202	D-6
D201	D-4
IC201	B-4
RV201	A-3
RV202	A-2
RV203	B-7
RV204	A-6
RV205	B-6
RV206	C-6


HF-24 BOARD
A
B
C
D
1
2
3
4
5
6
7
18
RV202
R218
C228
C229
C230
JW306
C227
R202
RV201
JW307
JR305
JR204
JR306
C233
C234
C235
R220
R221
RV204
JW314
JW313
JW312
C250
JW301
C221
C226
R215
R216
C224
C225
R212
C219
C218
C223
C222
IC201
C236
R222
R224
R223
C237
RV205
JR310
RV203
R219
R225
JR203
C217
C216
C215
JW302
C214
C212
C213
C231
JW303
R209
C209
C208
C206
C207
C205
C204
C232
JR303
JR301
JR302
JW304
JW305
JR304
JW308
JR307
C242
R201
RV206
C239
C240
C241
JW311
R226
R227
R228
C246
C247
C248
C245
C244
C243
C249
JW310
JR308
JW309
JR309
CN201
D201
CN202
1
20
12
1-641-259-
12

< DIODE >

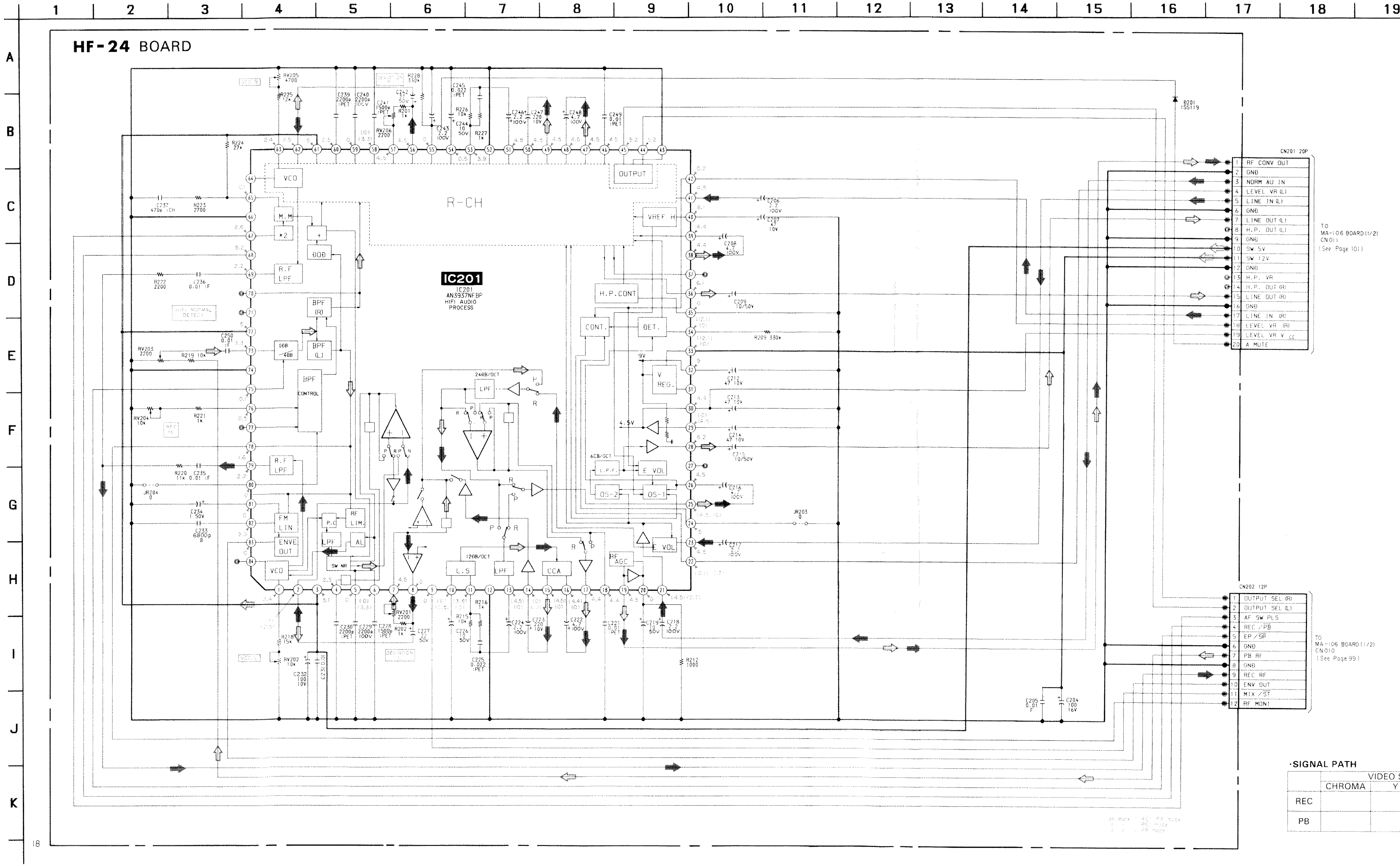
D201 8-719-911-19 DIODE 1SS119

< IC >

IC201 8-759-057-63 IC AN3937NFBP

HF-24 (AUDIO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. HF-24 BOARD 3,000 series—



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A B C D E F G H I J K
HF-24 BOARD
IC201
IC201 AN3957NFBP HIFI AUDIO PROCESS
R-CH
VCO
M.M
×2
DOB
R.F LPF
BPF (R)
BPF (L)
DOB -40B
BPF CONTROL
FM LIN
ENVE OUT
P.C
RF LIM
LPF
AL
SW NR
OUTPUT
VREF H
H.P.CONT
CONT.
DET.
V REG.
L.P.F.
E VOL
OS-2
OS-1
RF AGC
L.S
LPF
CCA
24dB/OCT
12dB/OCT
6dB/OCT
4.5V
9V
D201 1SS119
JR203
JR204
RV201 2200
RV202 10k
RV203 2700
RV204 10k
RV205 4700
CN201 20P
1 RF CONV OUT
2 GND
3 NORM AU IN
4 LEVEL VR (L)
5 LINE IN (L)
6 GND
7 LINE OUT (L)
8 H.P. OUT (L)
9 GND
10 SW 5V
11 SW 12V
12 GND
13 H.P. VR
14 H.P. OUT (R)
15 LINE OUT (R)
16 GND
17 LINE IN (R)
18 LEVEL VR (R)
19 LEVEL VR V CC
20 A MUTE
TO MA-106 BOARD (1/2) CN011 (See Page 101)
CN202 12P
1 OUTPUT SEL (R)
2 OUTPUT SEL (L)
3 AF SW PLS
4 REC / PB
5 EP / SP
6 GND
7 PB RF
8 GND
9 REC RF
10 ENV OUT
11 MIX / ST
12 RF MONI
TO MA-106 BOARD (1/2) CN010 (See Page 99)
18

·SIGNAL PATH

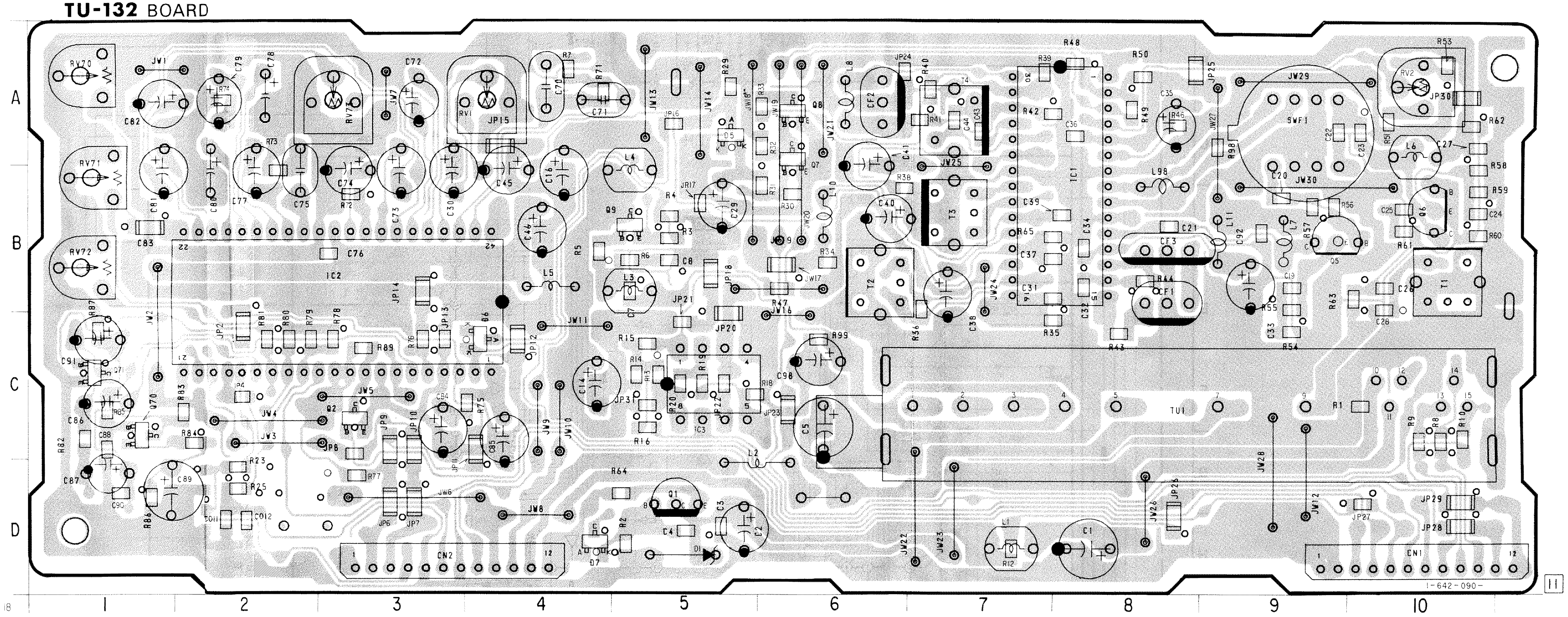
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				⇨

TU-132 (TUNER) PRINTED WIRING BOARD

—Ref. No. TU-132 BOARD: 4,000 series—

TU-132 BOARD

CN001	D-10
CN002	D-3
D001	D-5
D005	A-5
D006	C-3
D007	D-4
IC001	B-8
IC002	B-2
IC003	C-5
Q001	D-5
Q002	D-9
Q005	B-10
Q006	B-10
Q007	B-6
Q008	A-6
Q009	B-5
Q070	C-1
Q071	C-1
RV001	A-4
RV002	A-10
RV070	A-2
RV071	B-1
RV072	B-1
RV073	A-3



< DIODE >

D001	8-719-929-71	DIODE	HZS33NB1
D005	8-719-104-34	DIODE	1S2836
D006	8-719-104-34	DIODE	1S2836
D007	8-719-800-76	DIODE	1SS226

< IC >

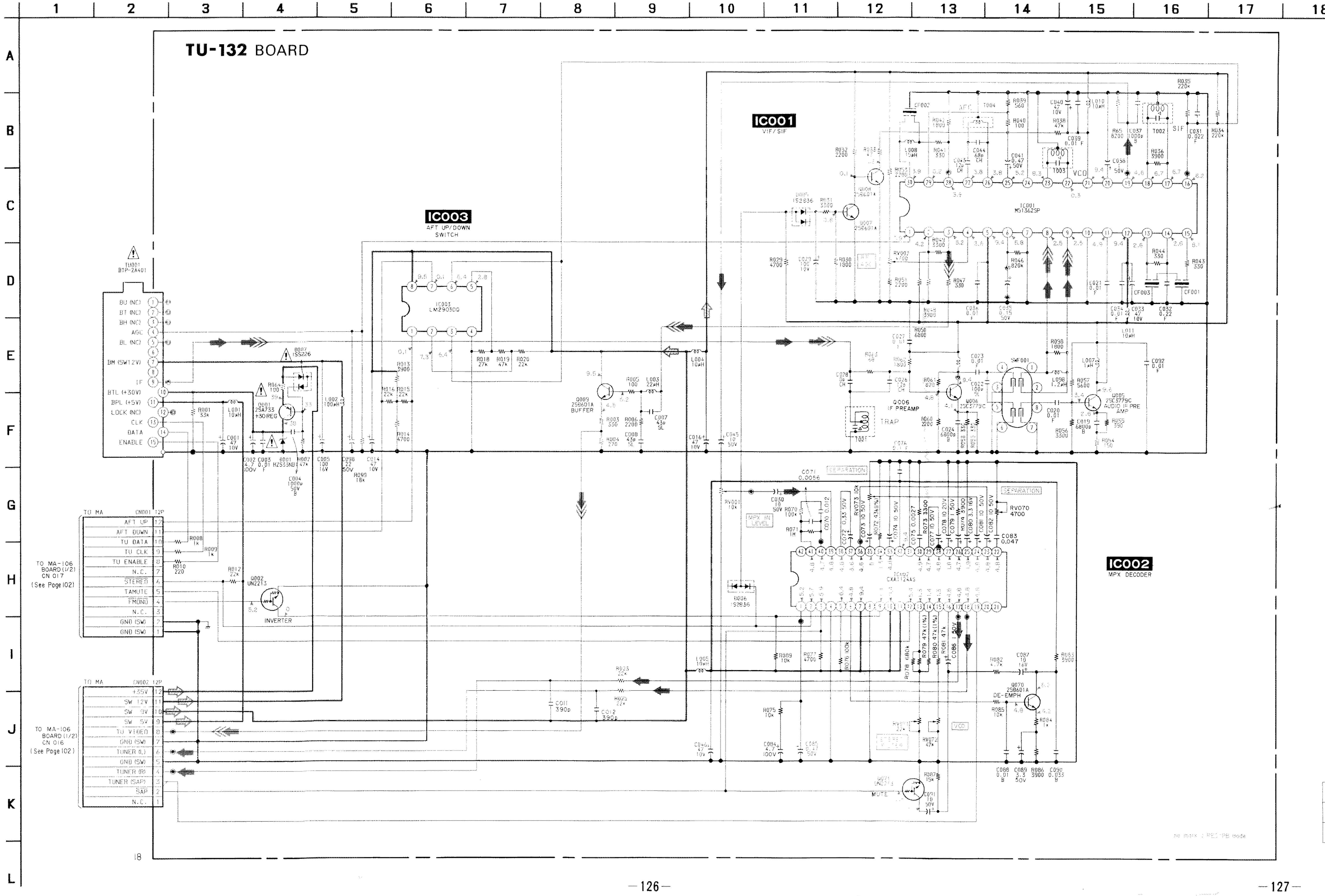
IC001	8-759-630-93	IC	M51362SP
IC002	8-752-035-71	IC	CXA1124AS
IC003	8-759-981-64	IC	LM2903DQ

< TRANSISTOR >

Q001	8-729-173-38	TRANSISTOR	2SA733-K
Q002	8-729-421-19	TRANSISTOR	UN2213
Q005	8-729-822-90	TRANSISTOR	2SC3779C
Q006	8-729-822-90	TRANSISTOR	2SC3779C
Q007	8-729-422-27	TRANSISTOR	2SD601A-QRS
Q008	8-729-422-27	TRANSISTOR	2SD601A-QRS
Q009	8-729-422-27	TRANSISTOR	2SD601A-QRS
Q070	8-729-422-27	TRANSISTOR	2SD601A-QRS
Q071	8-729-421-19	TRANSISTOR	UN2213

TU-132 (TUNER) SCHEMATIC DIAGRAM

— Ref. No. TU-132 BOARD: 4,000 series —



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
K
L
TU-132 BOARD
IC001
VIF/SIF
IC001
M51362SP
IC002
MPX DECODER
IC002
CXA1124AS
IC003
AFT UP/DOWN SWITCH
IC003
LM2903DG
TU001
BTP-2A401
BU (NC)
BT (NC)
BH (NC)
AGC
BL (NC)
BM (SW12V)
IF
BTL (+30V)
BPL (+5V)
LOCK (NC)
CLK
DATA
ENABLE
D007
1SS226
Q001
2SA733
+30 REG
R001 33k
L001 10μH
L002 100μH
C001 47 10V
C002 4.7 100V
C003 0.01 F
D001 HZS33NB
R002 47k
C004 1000p 50V B
C005 100 16V
C098 22 50V
R099 18k
C014 47 10V
R013 3900
R014 4700
R015 22k
R016 22k
R018 27k
R019 47k
R020 22k
TO MA
CN001 12P
AFT UP
AFT DOWN
TU DATA
TU CLK
TU ENABLE
N.C.
STEREO
TAMUTE
FMONO
GND (SW)
TO MA-106 BOARD (1/2) CN 017 (See Page 102)
R008 1k
R009 1k
R010 220
R012 22k
Q002
UN2213
INVERTER
TO MA
CN002 12P
+35V
SW 12V
SW 9V
SW 5V
TU VIDEO
TUNER (L)
TUNER (R)
TUNER (SAP)
SAP
TO MA-106 BOARD (1/2) CN 016 (See Page 102)
Q009
2SC601A
BUFFER
L003 22μH
L004 10μH
Q006
IF PREAMP
SWF001
TRAP
Q005
2SC3779C
AUDIO IF PRE AMP
AFC
VCO
SIF
T002
T004
SEPARATION
MPX IN LEVEL
RV070 4700
C083 0.047
C071 0.0056
D206
S2836
Q070
2SB601A
DE-EMPH
Q071
MUTE
VCO
C088 0.01 B
C089 3.3 50V
R086 3900
C090 0.033 B
18

·SIGNAL PATH

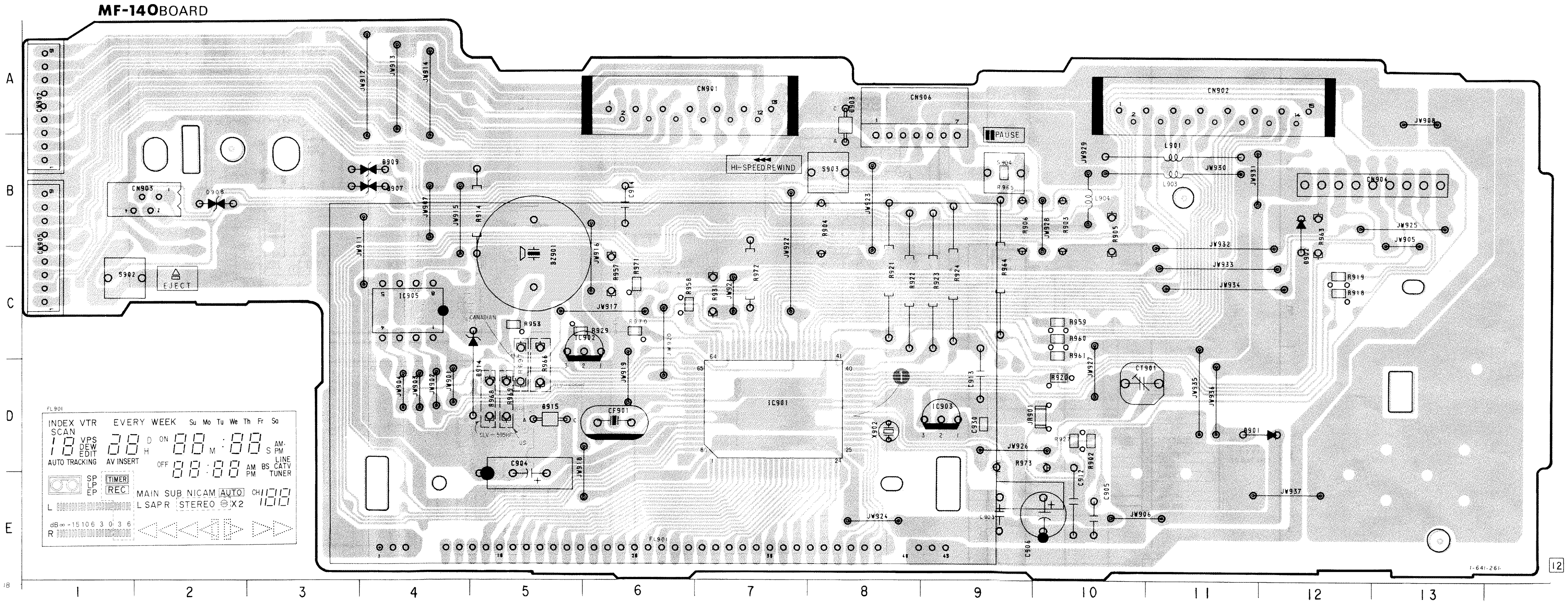
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡
PB				

MF-140 (TIMER/MODE CONTROL) PRINTED WIRING BOARD

—Ref. No. MF-140 BOARD: 1,000 series—

MF-140 BOARD

CN901	A-6
CN902	A-11
CN903	B-2
CN904	B-13
CN905	B-1
CN906	A-8
CN907	A-1
D901	D-12
D902	B-12
D903	A-8
D907	B-4
D908	B-2
D909	B-4
D914	C-5
D915	D-5
IC901	D-7
IC902	C-6
IC903	D-9
IC905	C-4


MF-140BOARD
A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
11
12
13
CN901
CN902
CN903
CN904
CN905
CN906
CN907
D901
D903
D907
D908
D909
D914
D915
IC901
IC902
IC903
IC905
BZ901
CF901
CT901
L901
L903
L904
X902
S902
S903
S904
FL901
JW912
JW913
JW914
JW916
JW917
JW918
JW919
JW922
JW923
JW924
JW925
JW926
JW927
JW928
JW929
JW930
JW931
JW932
JW933
JW934
JW935
JW936
JW937
JW905
JW906
JW908
R902
R903
R904
R905
R906
R914
R918
R919
R920
R921
R922
R923
R924
R929
R931
R943
R944
R953
R957
R958
R959
R960
R961
R964
R965
R966
R968
R970
R971
R972
R973
C904
C905
C906
C913
C914
C917
C934
HI-SPEED REWIND
PAUSE
EJECT
CANADIAN
SLV—595HF
US
INDEX VTR
SCAN
EVERY WEEK
Su Mo Tu We Th Fr Sa
VPS
DEW
EDIT
AUTO TRACKING
AV INSERT
ON
OFF
AM
PM
LINE
BS CATV
TUNER
SP
LP
EP
TIMER
REC
MAIN SUB NICAM AUTO
L SAP R STEREO X2
CH
L
R
dB ∞ -15 10 6 3 0 3 6
1-641-261-
12

< DIODE >

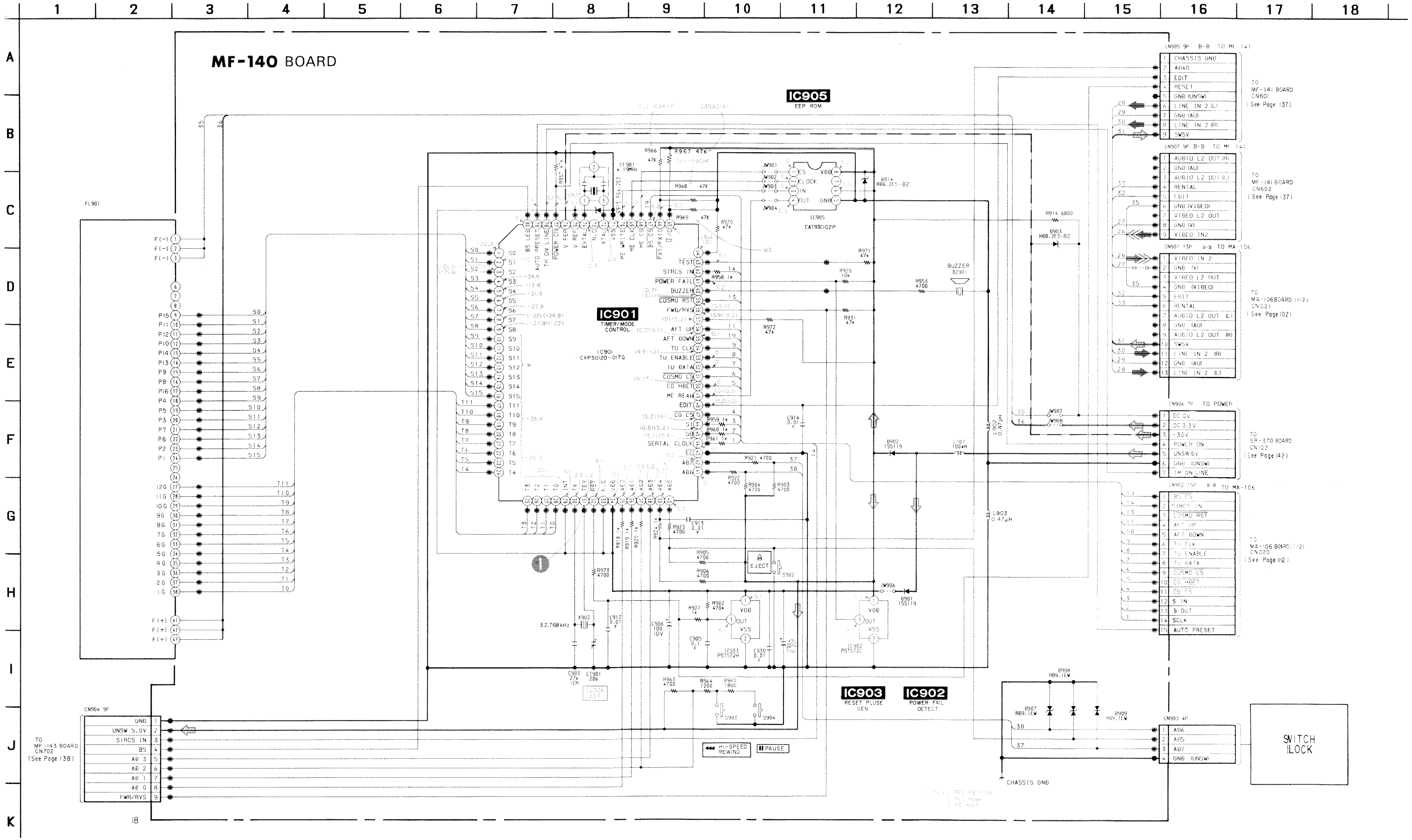
D901	8-719-911-19	DIODE	1SS119
D902	8-719-911-19	DIODE	1SS119
D903	8-719-110-08	DIODE	RD8.2ES-B2
D907	8-719-108-12	DIODE	RD9.1E-W
D908	8-719-108-12	DIODE	RD9.1E-W
D909	8-719-108-12	DIODE	RD9.1E-W
D914	8-719-109-93	DIODE	RD6.2ES-B2
D915	8-719-109-93	DIODE	RD6.2ES-B2

< IC >

IC901	8-752-835-36	IC	CXP50124-017Q
IC902	8-759-510-43	IC	PST572C
IC903	8-759-515-58	IC	PST572H
IC905	8-759-996-59	IC	CAT35C102P

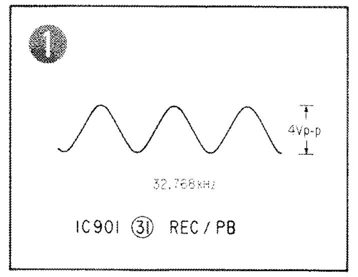
MF-140 (TIMER/MODE CONTROL) SCHEMATIC DIAGRAM

—Ref. No. MF-140 BOARD: 1,000 series—



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K
MF-140 BOARD
IC905
EEP ROM
IC905 CAT93C102P
CS VDD CLOCK IN OUT GND
IC901
TIMER/MODE CONTROL
IC901 CXP50120-017Q
FL901
S0 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15
T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11
TEST
SIRCS IN
POWER FAIL
BUZZER
COSMO RST
FWD/RVS
AFT UP
AFT DOWN
TU CLK
TU ENABLE
TU DATA
COSMO CS
CG HDET
ME REAM
EDIT
EG CS
SERIAL CLOCK
AD7 AD6
BUZZER BZ901
EJECT S902
32.768kHz
X902
IC903 PST572H
IC902 PST572C
IC903
RESET PLUSE GEN
IC902
POWER FAIL DETECT
HI-SPEED REWIND
PAUSE
SWITCH LOCK
CHASSIS GND
CN905 9P B-B TO MF-141
1 CHASSIS GND
2 AD40
3 EDIT
4 RESET
5 GND (UNSW)
6 LINE IN 2 (L)
7 GND (AU)
8 LINE IN 2 (R)
9 SW5V
TO MF-141 BOARD CN601 (See Page 137)
CN907 9P B-B TO MF-141
1 AUDIO L2 OUT (R)
2 GND (AU)
3 AUDIO L2 OUT (L)
4 RENTAL
5 EDIT
6 GND (VIDEO)
7 VIDEO L2 OUT
8 GND (V)
9 VIDEO IN2
TO MF-141 BOARD CN602 (See Page 137)
CN901 13P B-B TO MA-106
1 VIDEO IN 2
2 GND (V)
3 VIDEO L2 OUT
4 GND (VIDEO)
5 EDIT
6 RENTAL
7 AUDIO L2 OUT (L)
8 GND (AU)
9 AUDIO L2 OUT (R)
10 SW5V
11 LINE IN 2 (R)
12 GND (AU)
13 LINE IN 2 (L)
TO MA-106BOARD (1/2) CN021 (See Page 102)
CN906 7P TO POWER
1 DC 0V
2 DC 3.3V
3 -30V
4 POWER ON
5 UNSW 6V
6 GND (UNSW)
7 TM ON LINE
TO SR-370 BOARD CN102 (See Page 142)
CN902 15P B-B TO MA-106
1 BS CS
2 SIRCS IN
3 COSMO RST
4 AFT UP
5 AFT DOWN
6 TU CLK
7 TU ENABLE
8 TU DATA
9 COSMO CS
10 CG HDET
11 CG CS
12 S IN
13 S OUT
14 SCLK
15 AUTO PRESET
TO MA-106 BOARD (1/2) CN020 (See Page 112)
CN903 4P
1 AD6
2 AD5
3 AD7
4 GND (UNSW)
CN904 9P
GND 1
UNSW 5.0V 2
SIRCS IN 3
BS 4
AD 3 5
AD 2 6
AD 1 7
AD 0 8
FWR/RVS 9
TO MF-143 BOARD CN702 (See Page 138)
18

MF-140 BOARD



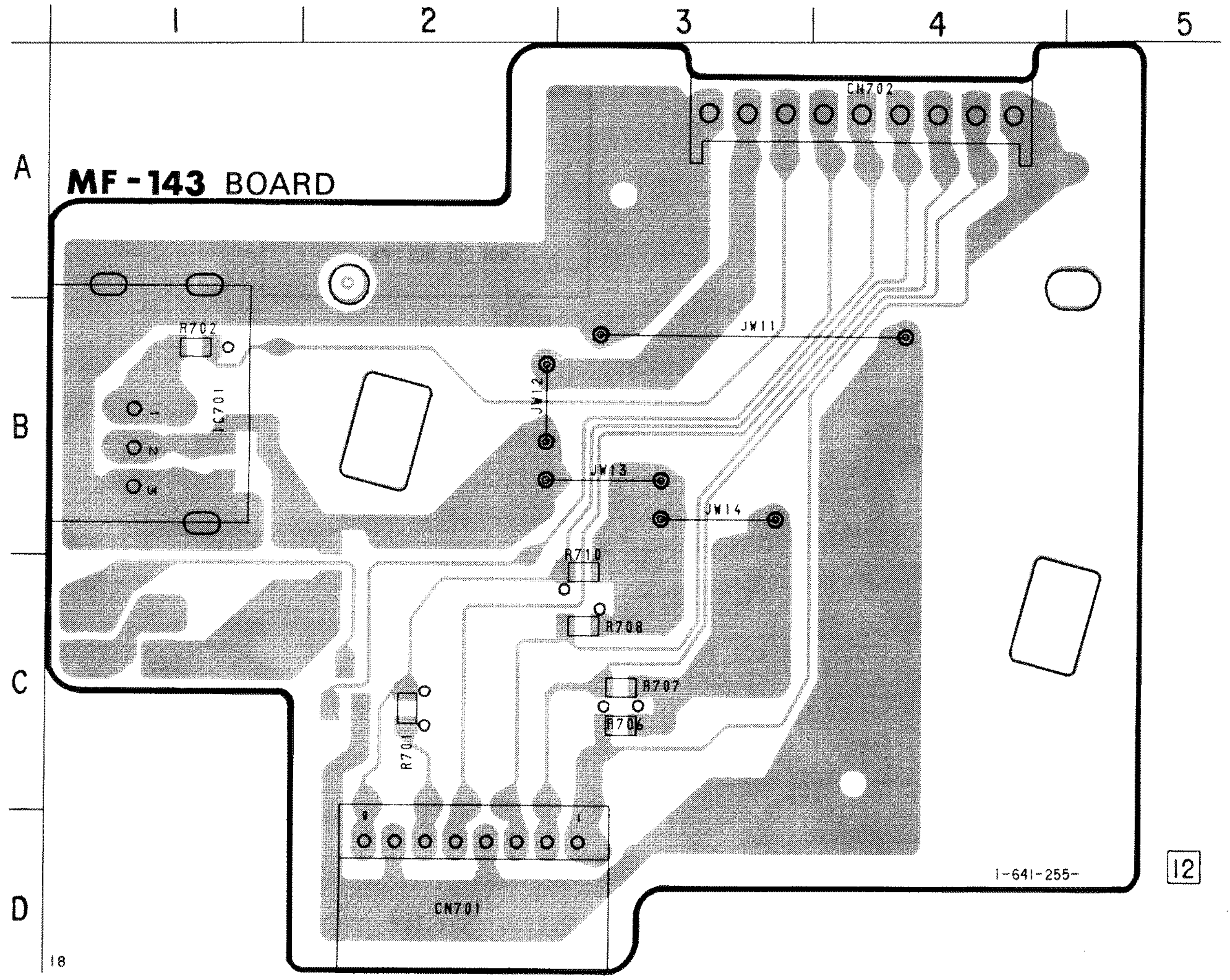
·SIGNAL PATH

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡
PB				

MF-141 (VIDEO/AUDIO IN) MF-143 (FUNCTION SWITCH) PRINTED WIRING BOARDS

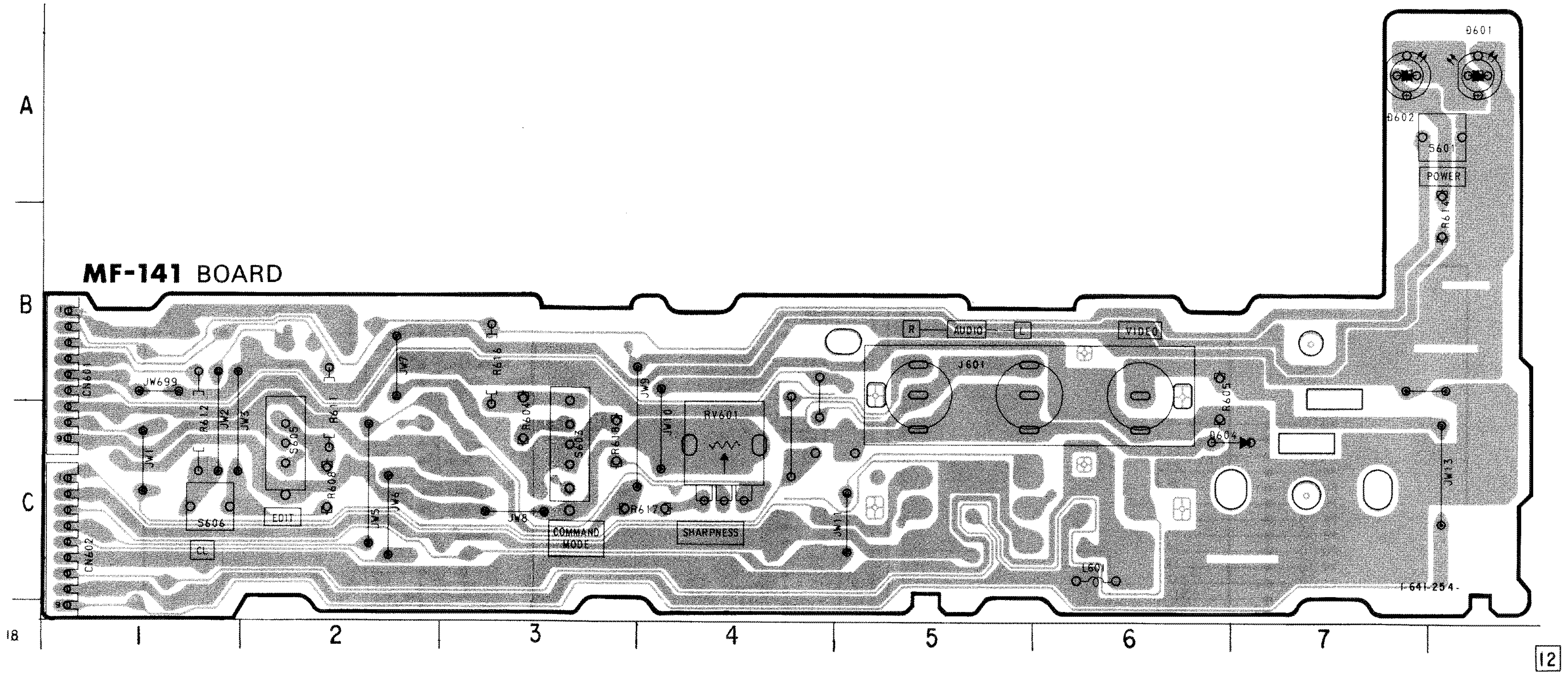
—Ref. No. MF-141 BOARD: 3,000 series, MF-143 BOARD: 1,000 series—

MF-143 BOARD	
CN701	D-2
CN702	A-4
IC701	B-1



MF-143 BOARD
1
2
3
4
5
A
B
C
D
CN702
R702
IC701
JW11
JW12
JW13
JW14
R710
R708
R707
R706
R701
CN701
1-641-255-
12
18

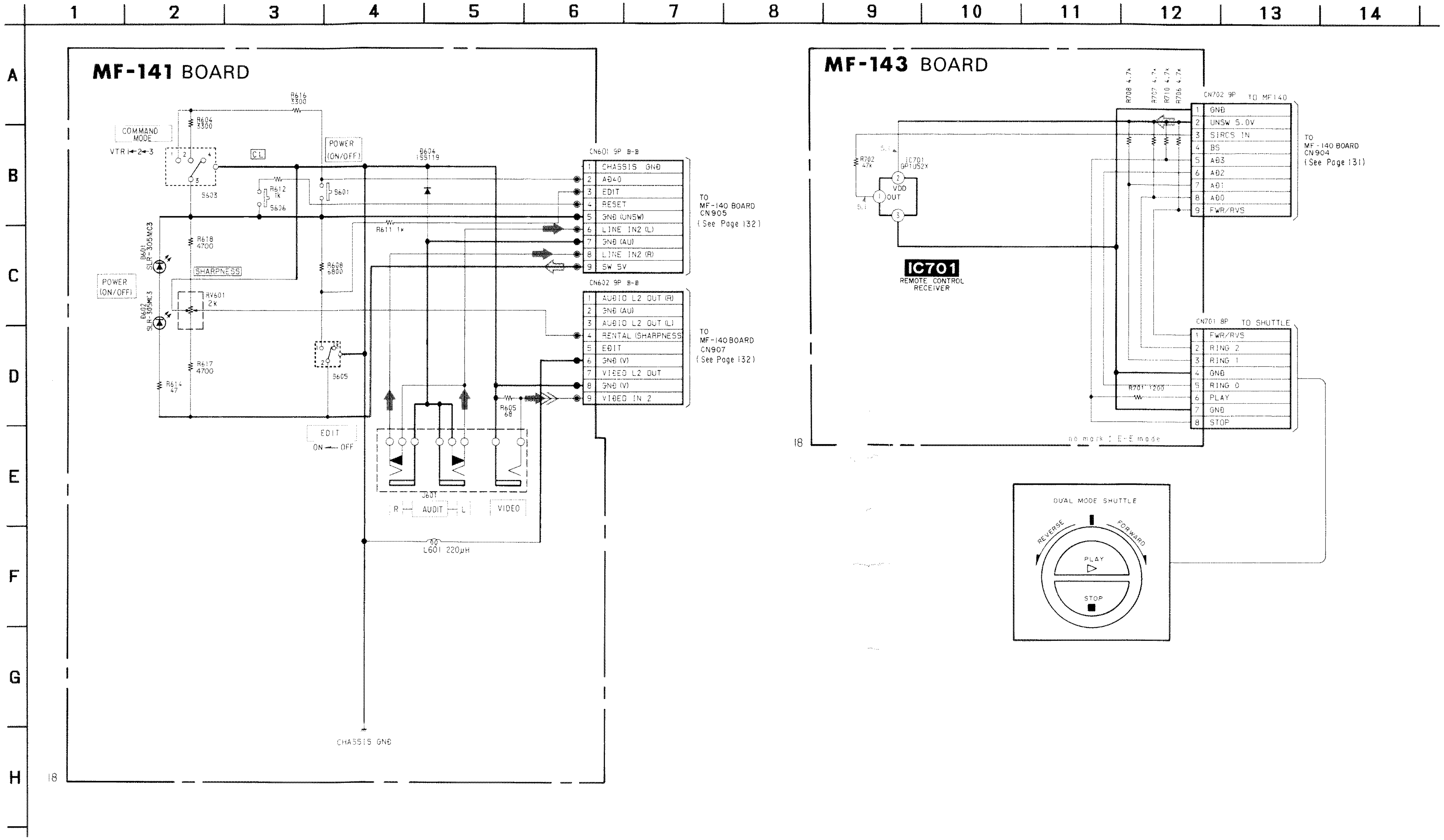
MF-141 BOARD	
CN601	B-1
CN602	C-1
D601	A-8
D602	A-7
D604	C-7



MF-141 BOARD
A
B
C
1
2
3
4
5
6
7
D601
D602
S601
POWER
R614
CN601
CN602
JW699
JW1
R612
JW2
JW3
S605
R611
R608
S606
EDIT
CL
JW5
JW6
JW7
R616
R604
S603
JW8
COMMAND MODE
R613
JW9
JW10
R617
RV601
SHARPNESS
JW11
R
AUDIO
L
VIDEO
J601
R605
D604
L601
JW13
1-641-254-
12
18

MF-141 (VIDEO/AUDIO IN) MF-143 (FUNCTION SWITCH) SCHEMATIC DIAGRAMS

—Ref. No. MF-141 BOARD: 3,000 series, MF-143 BOARD: 1,000 series—


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
MF-141 BOARD
R616 3300
R604 3300
COMMAND MODE
VTR 1←2←3
S603
CL
POWER (ON/OFF)
D604 1SS119
R612 1k
S606
S601
R611 1k
R618 4700
R608 6800
D601 SLR-305MC3
D602 SLR-305MC3
SHARPNESS
POWER (ON/OFF)
RV601 2k
S605
R617 4700
R614 47
EDIT
ON ← OFF
R605 68
J601
R AUDIT L
VIDEO
L601 220μH
CHASSIS GND
18
CN601 9P B-B
1 CHASSIS GND
2 AD40
3 EDIT
4 RESET
5 GND (UNSW)
6 LINE IN2 (L)
7 GND (AU)
8 LINE IN2 (R)
9 SW 5V
TO MF-140 BOARD CN905 (See Page 132)
CN602 9P B-B
1 AUDIO L2 OUT (R)
2 GND (AU)
3 AUDIO L2 OUT (L)
4 RENTAL (SHARPNESS
5 EDIT
6 GND (V)
7 VIDEO L2 OUT
8 GND (V)
9 VIDEO IN 2
TO MF-140 BOARD CN907 (See Page 132)
MF-143 BOARD
R708 4.7k
R707 4.7k
R710 4.7k
R706 4.7k
CN702 9P TO MF140
1 GND
2 UNSW 5.0V
3 SIRCS IN
4 BS
5 AD3
6 AD2
7 AD1
8 AD0
9 FWR/RVS
TO MF-140 BOARD CN904 (See Page 131)
R702 47k
5.1
IC701 GP1U52X
VDD
OUT
IC701
REMOTE CONTROL RECEIVER
CN701 8P TO SHUTTLE
1 FWR/RVS
2 RING 2
3 RING 1
4 GND
5 RING 0
6 PLAY
7 GND
8 STOP
R701 1200
No mark : E-E mode
18
DUAL MODE SHUTTLE
REVERSE
FORWARD
PLAY
STOP

·SIGNAL PATH

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡
PB				

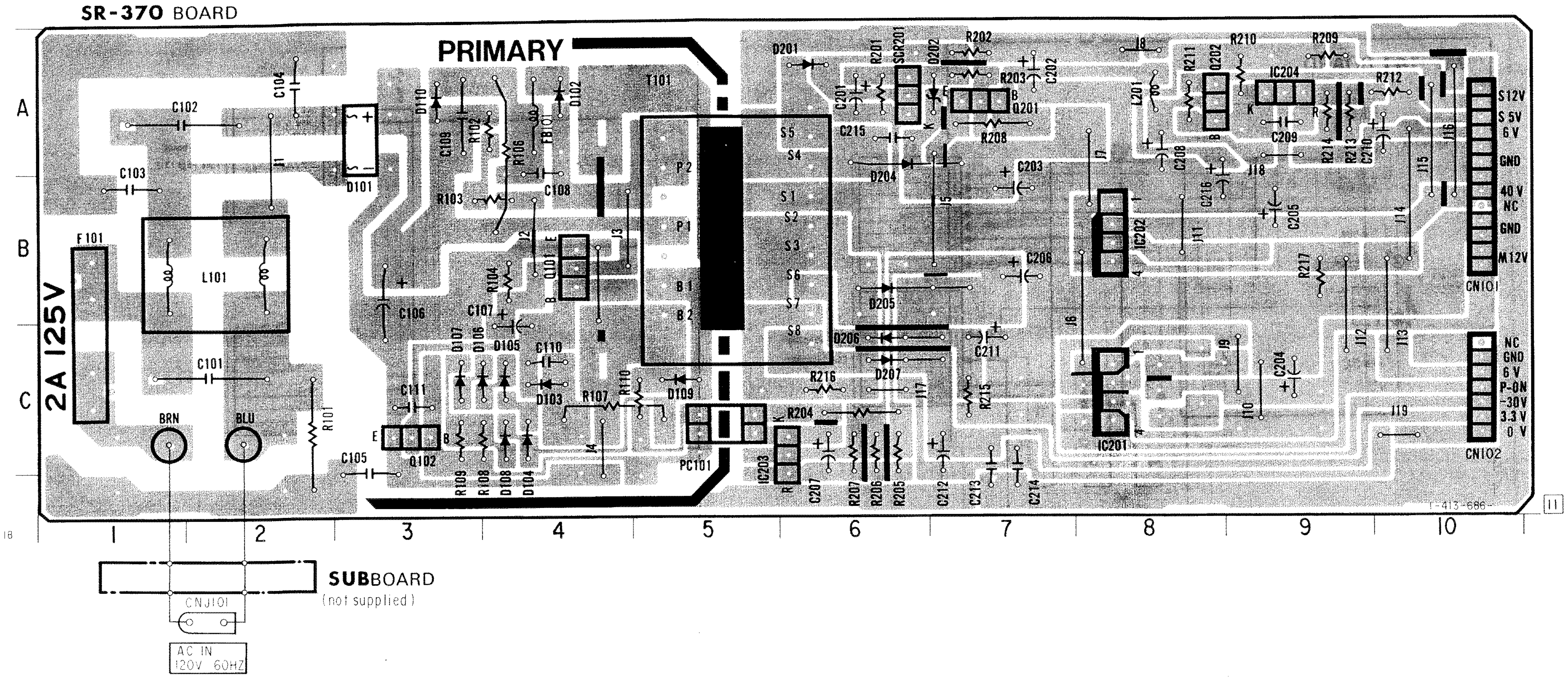
SR-370 (POWER) PRINTED WIRING BOARD

—Ref. No. SR-370 BOARD: 4,000 series—

JVC

SR-370 BOARD

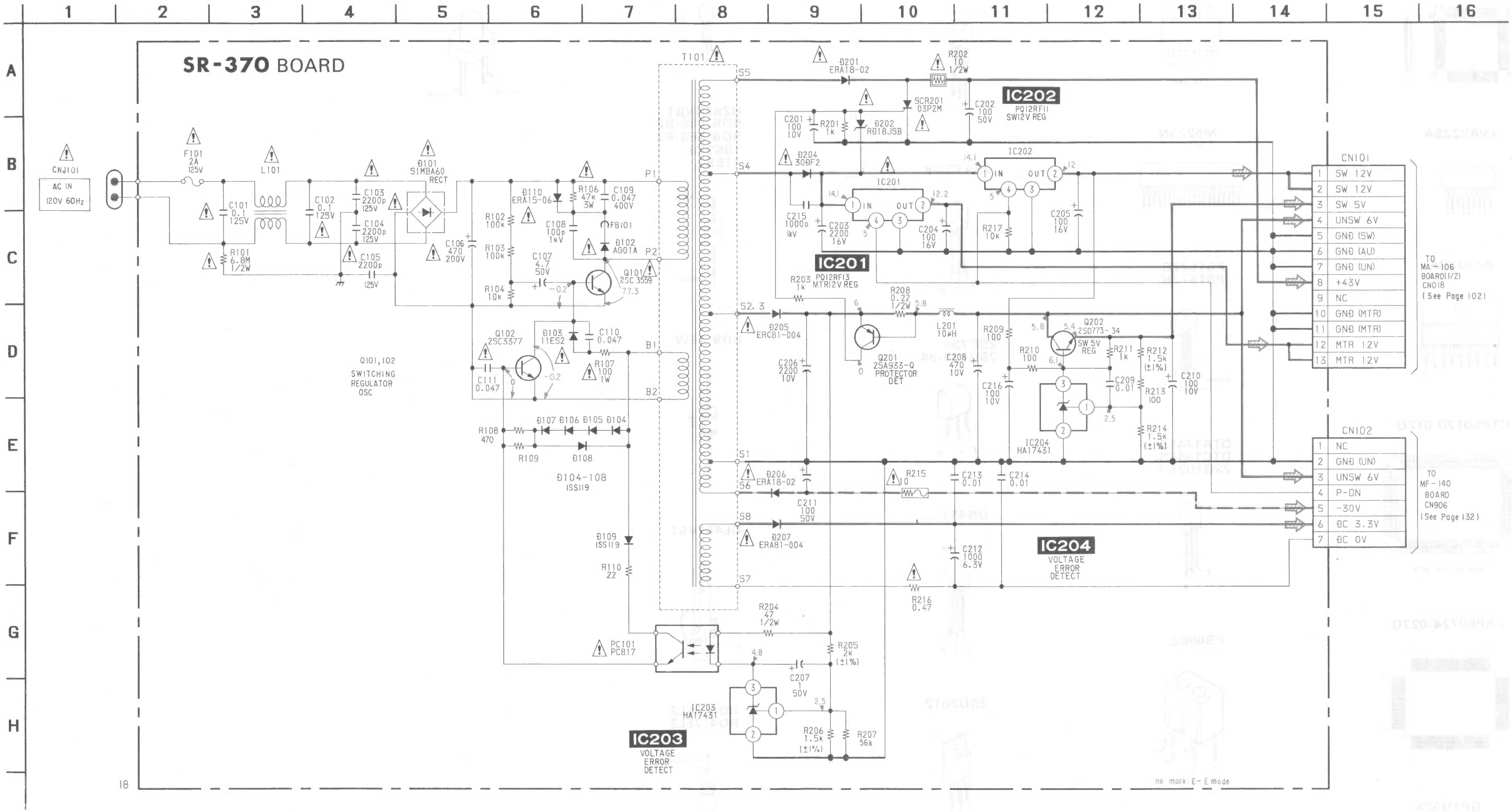
CN101	A-10
CN102	C-10
D101	A-3
D102	A-4
D103	C-4
D104	C-4
D105	C-4
D106	C-4
D107	C-3
D108	C-4
D109	C-5
D110	A-3
D201	A-6
D202	A-6
D204	B-6
D205	B-6
D206	C-6
D207	C-6
IC201	C-8
IC202	B-8
IC203	C-6
IC204	A-9
Q101	B-4
Q102	C-3
Q201	A-7
Q202	A-9


SR-370 BOARD
PRIMARY
A
B
C
1
2
3
4
5
6
7
8
9
10
2A 125V
F101
L101
T101
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
D101
D102
D103
D104
D105
D106
D107
D108
D109
D110
FB101
Q101
Q102
R101
R102
R103
R104
R106
R107
R108
R109
R110
PC101
P2
P1
B1
B2
S1
S2
S3
S4
S5
S6
S7
S8
D201
D202
D204
D205
D206
D207
SCR201
Q201
Q202
IC201
IC202
IC203
IC204
R201
R202
R203
R204
R205
R206
R207
R208
R209
R210
R211
R212
R213
R214
R215
R216
R217
C201
C202
C203
C204
C205
C206
C207
C208
C209
C210
C211
C212
C213
C214
C215
C216
L201
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J16
J17
J18
J19
S12V
S 5V
6V
GND
40V
NC
GND
M12V
CN101
NC
GND
6V
P-ON
-30V
3.3V
0V
CN102
BRN
BLU
SUBBOARD
(not supplied)
CNJ101
AC IN
120V 60HZ

POWER POWER

SR-370 (POWER) SCHEMATIC DIAGRAM

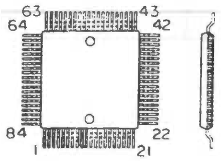
—Ref. No. SR-370 BOARD: 4,000 series—


SR-370 BOARD
CNJ101
AC IN 120V 60Hz
F101 2A 125V
L101
C101 0.1 125V
R101 6.8M 1/2W
C102 0.1 125V
C103 2200p 125V
C104 2200p 125V
C105 2200p 125V
D101 S1MBA60 RECT
C106 470 200V
R102 100k
R103 100k
R104 10k
D110 ERA15-06
R106 47k 3W
C109 0.047 400V
C108 100p 1kV
C107 4.7 50V
FB101
D102 AG01A
Q101 2SC3559
Q102 2SC3377
D103 11ES2
C110 0.047
R107 100 1W
C111 0.047
Q101,102 SWITCHING REGULATOR OSC
R108 470
R109
D107 D106 D105 D104
D108
D104-108 1SS119
D109 1SS119
R110 22
PC101 PC817
T101
P1 P2 B1 B2
S5 S4 S2,3 S1 S6 S8 S7
D201 ERA18-02
R202 10 1/2W
SCR201 03P2M
C202 100 50V
IC202 PQ12RF11 SW12V REG
C201 100 10V
R201 1k
D202 RD18JSB
D204 30DF2
IC201
C215 1000p 1kV
C203 2200 16V
C204 100 16V
R217 10k
C205 100 16V
IC201 PQ12RF13 MTR12V REG
R203 1k
R208 0.22 1/2W
D205 ERC81-004
C206 2200 10V
Q201 2SA933-Q PROTECTOR DET
L201 10μH
R209 100
C208 470 10V
R210 100
Q202 2SD773-34 SW 5V REG
R211 1k
R212 1.5k (±1%)
C209 0.01
R213 100
C210 100 10V
C216 100 10V
IC204 HA17431
R214 1.5k (±1%)
D206 ERA18-02
R215 10
C213 0.01
C214 0.01
C211 100 50V
D207 ERA81-004
C212 1000 6.3V
IC204 VOLTAGE ERROR DETECT
R216 0.47
R204 47 1/2W
R205 2k (±1%)
C207 1 50V
IC203 HA17431
R206 1.5k (±1%)
R207 56k
IC203 VOLTAGE ERROR DETECT
CN101
1 SW 12V
2 SW 12V
3 SW 5V
4 UNSW 6V
5 GND (SW)
6 GND (AU)
7 GND (UN)
8 +43V
9 NC
10 GND (MTR)
11 GND (MTR)
12 MTR 12V
13 MTR 12V
TO MA-106 BOARD(1/2) CN018 (See Page 102)
CN102
1 NC
2 GND (UN)
3 UNSW 6V
4 P-ON
5 -30V
6 DC 3.3V
7 DC 0V
TO MF-140 BOARD CN906 (See Page 132)
no mark: E-E mode
18
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H

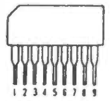
NPN PNP

4-3. SEMICONDUCTOR LEAD LAYOUT

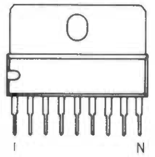
AN3937NFBP


63
43
64
42
84
22
1
21

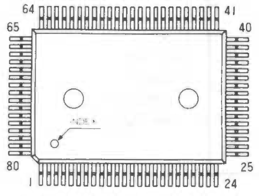
LVA522SA



BA6238A

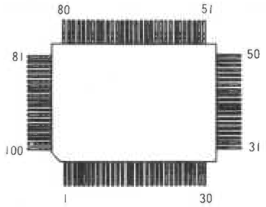


CXP50120-017Q

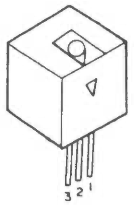

64
41
65
40
80
25
1
24

MARKING SIDE VIEW

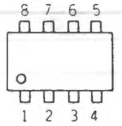
CXP80724-027Q


80
51
81
50
100
31
1
30

GP1U52X

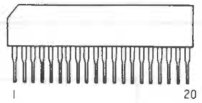


LC8991

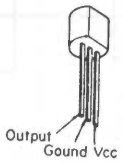


(Top view)

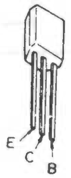
M5223N



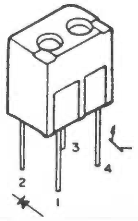
PST572C
PST572H


Output
Gound Vcc

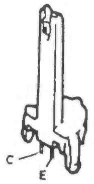
DTA144ES
DTC144ES
2SD1021-F



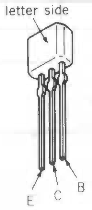
PS6002



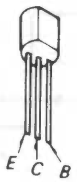
PT483FIS



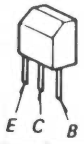
2SA1309A-R


letter side
E
C
B

2SA733-K



2SB734
2SD774-34



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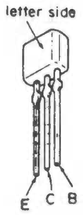
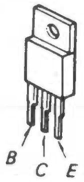
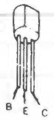

letter side
E
C
B

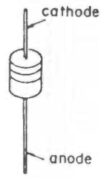
2SD2012



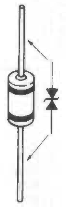
2SC3779C



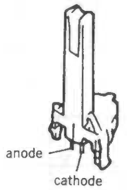
HZS33NB1
RD6.2ES-B2
RD8.2ES-B2
1SS119
11ES2


cathode
anode

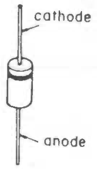
RD9.1EW



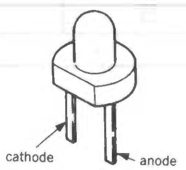
GL451VS1


anode
cathode

RD4.3EL2
RD4.7EL2


cathode
anode

SLR-305MC3F


cathode
anode

SECTION 5
EXPLODED VIEWS

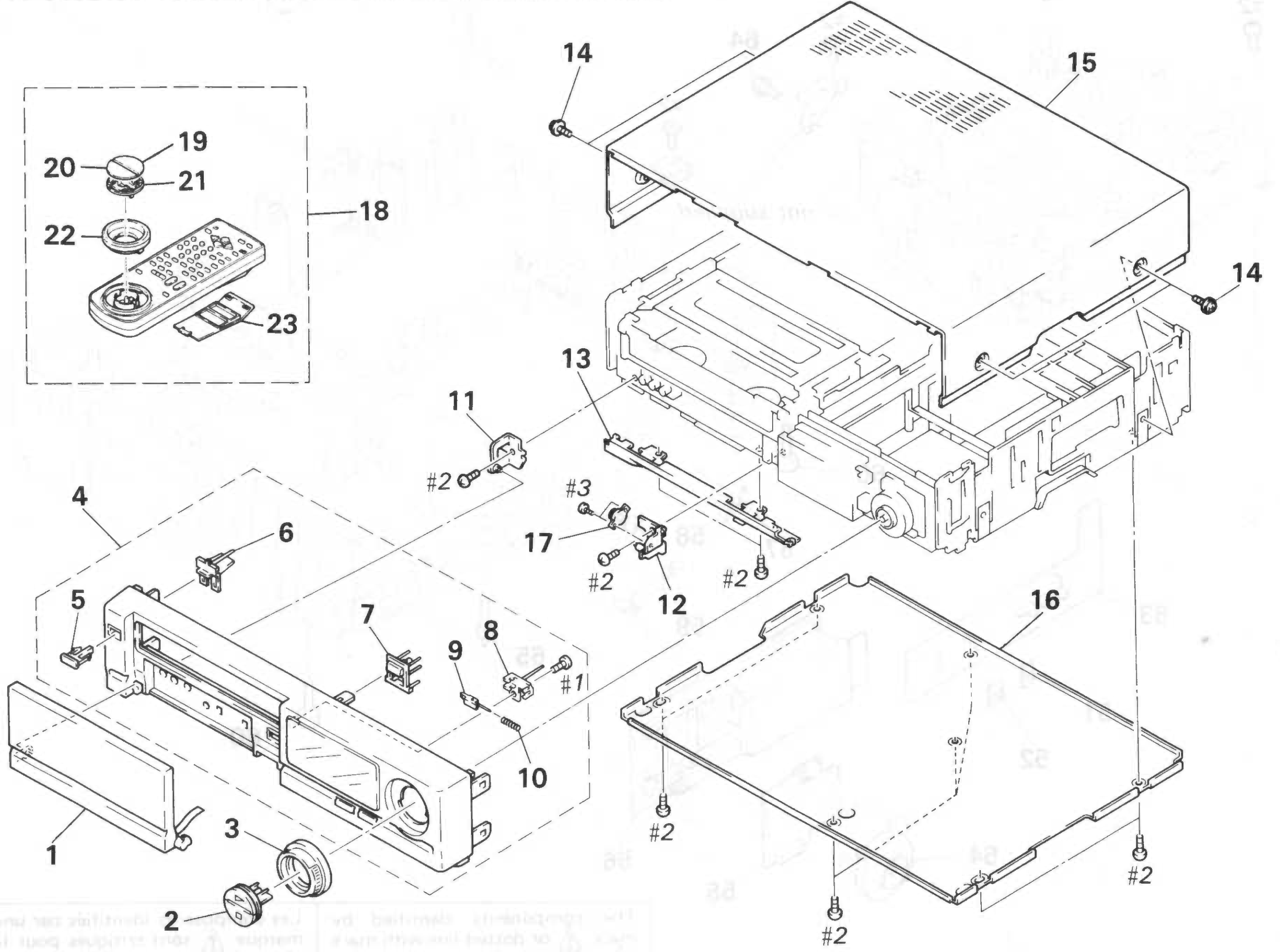
NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE(WHITE)...(RED)
  ↑ Parts color ↑ Cabinet's color

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- hardware (#mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

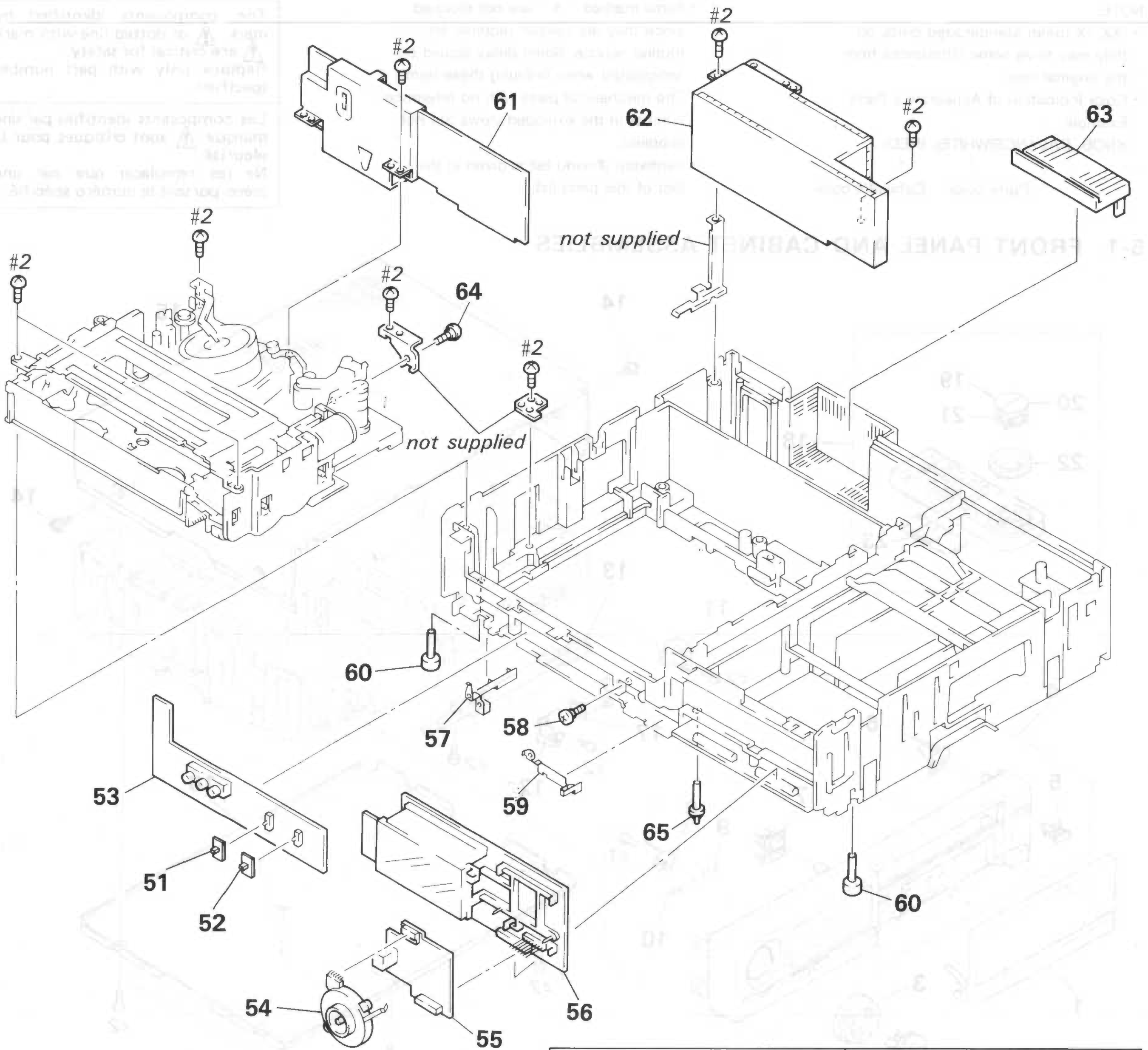
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	1-466-627-21	SWITCH BLOCK, CONTROL (SLV-595HF)	
1	1-466-627-31	SWITCH BLOCK, CONTROL (SLV-696HF)	
2	X-3941-295-1	BUTTON ASSY, FUNCTION	
3	3-944-572-11	RING, SHUTTLE	
4	X-3941-015-1	PANEL ASSY, FRONT (SLV-595HF)	
4	X-3941-016-1	PANEL ASSY, FRONT (SLV-696HF)	
5	3-944-561-11	BUTTON, POWER	
6	3-944-562-01	CHIP, POWER BUTTON	
7	3-944-560-11	BUTTON, EJECT	
8	3-944-563-01	CASE, LOCK CLAW	
9	3-944-564-01	CLAW, LOCK	
10	3-944-565-01	SPRING, COMPRESSION	
11	X-3941-003-1	PLATE (L) ASSY, FULCRUM	
12	X-3941-002-1	PLATE (R) ASSY, FULCRUM	
13	3-944-570-11	ESCUTCHEON, FRAME	
14	3-710-901-41	SCREW, TAPPING	
15	3-944-553-11	COVER, UPPER	
* 16	3-944-552-01	PLATE, BOTTOM	
17	3-712-786-31	DAMPER, OIL	
18	1-465-915-11	REMOTE COMMANDER (RMT-V102D)	(SLV-595HF)
18	1-465-916-11	REMOTE COMMANDER (RMT-V112A)	(SLV-696HF)
19	3-941-617-11	BUTTON, PLAYBACK	
20	3-941-618-11	BUTTON, STOP	
21	3-941-619-01	HOLDER, DIAL	
22	3-941-616-01	RING, SHUTTLE	
23	3-943-535-01	COVER, BATTERY	

5-2. MODE CONTROL AND POWER BLOCK ASSEMBLIES

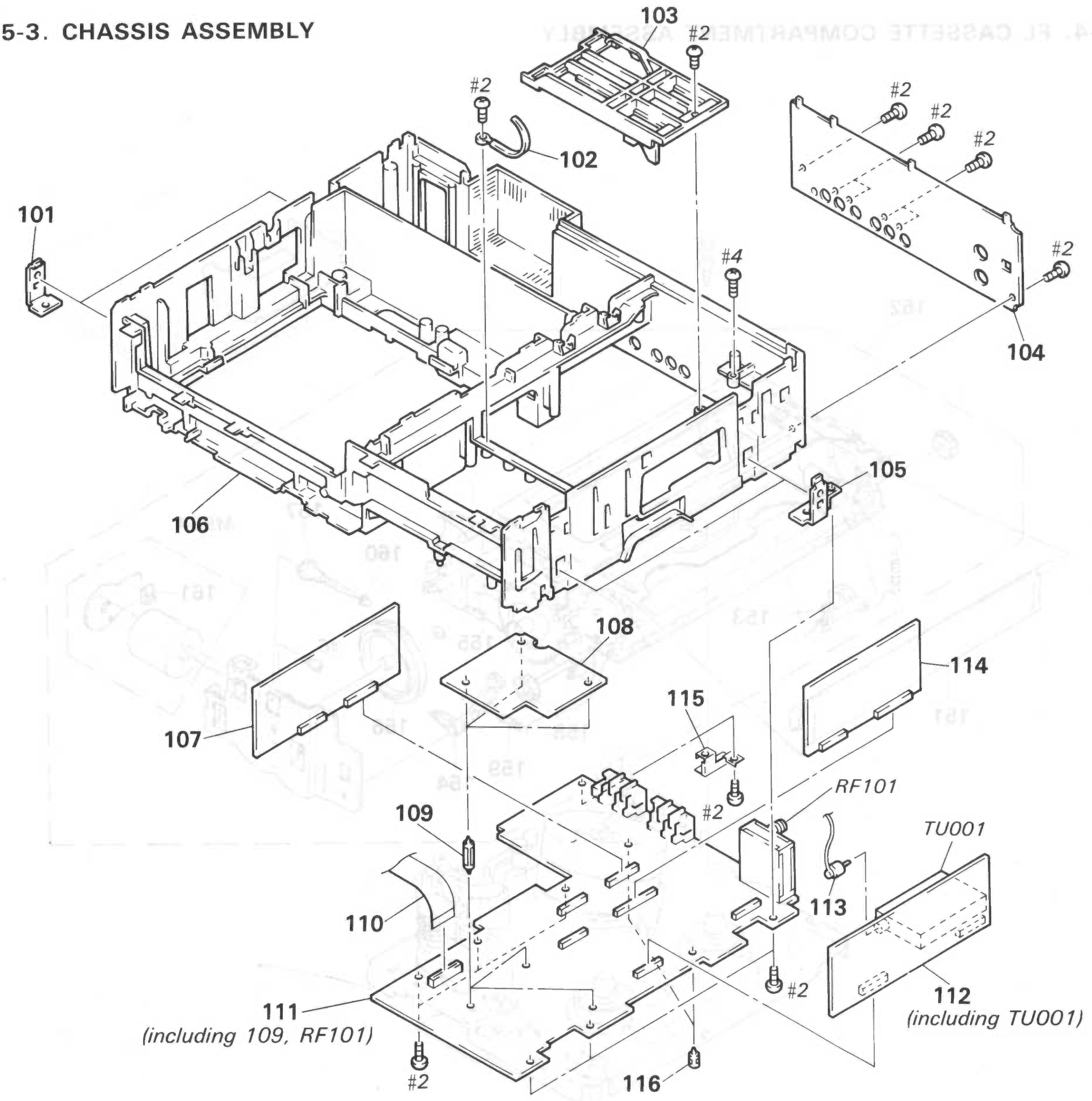


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description	Remark
51	3-946-831-01	KNOB, SELECTION (COMMAND MODE)	
52	3-744-217-01	KNOB, SELECTION (EDIT)	
✱ 53	A-6755-321-A	MF-141 BOARD, COMPLETE (SLV-595HF /SLV-696HF;Canadian)	
✱ 53	A-6755-324-A	MF-141 BOARD, COMPLETE (SLV-696HF;US)	
54	1-572-662-11	SWITCH, ROTARY	
✱ 55	A-6755-406-A	MF-143 BOARD, COMPLETE (SLV-696HF;US)	
✱ 55	A-6755-407-A	MF-143 BOARD, COMPLETE (SLV-595HF /SLV-696HF;Canadian)	
✱ 56	A-6721-440-A	MF-140 BOARD, COMPLETE (SLV-595HF)	
✱ 56	A-6721-442-A	MF-140 BOARD, COMPLETE (SLV-696HF)	

Ref. No.	Part No.	Description	Remark
✱ 57	3-944-613-01	PLATE, GROUND, MF	
58	3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
✱ 59	3-944-614-01	PLATE, GROUND, JK	
60	3-945-944-01	FOOT (1500)	
✱ 61	A-6727-393-A	RP-127 BOARD, COMPLETE (SLV-595HF)	
✱ 61	A-6727-394-A	RP-127 BOARD, COMPLETE (SLV-696HF)	
⚠ 62	1-413-686-21	POWER BLOCK (SR-370 BOARD)	1GB
✱ 63	3-946-136-01	COVER (S), REAR	
64	3-736-055-01	SCREW (3X8), TAPPING	
65	3-948-000-01	FOOT	

5-3. CHASSIS ASSEMBLY


103
#2
#2
102
#2
#2
#2
101
#4
#2
104
105
106
108
114
115
107
RF101
109
#2
TU001
110
113
#2
111
(including 109, RF101)
112
(including TU001)
#2
116

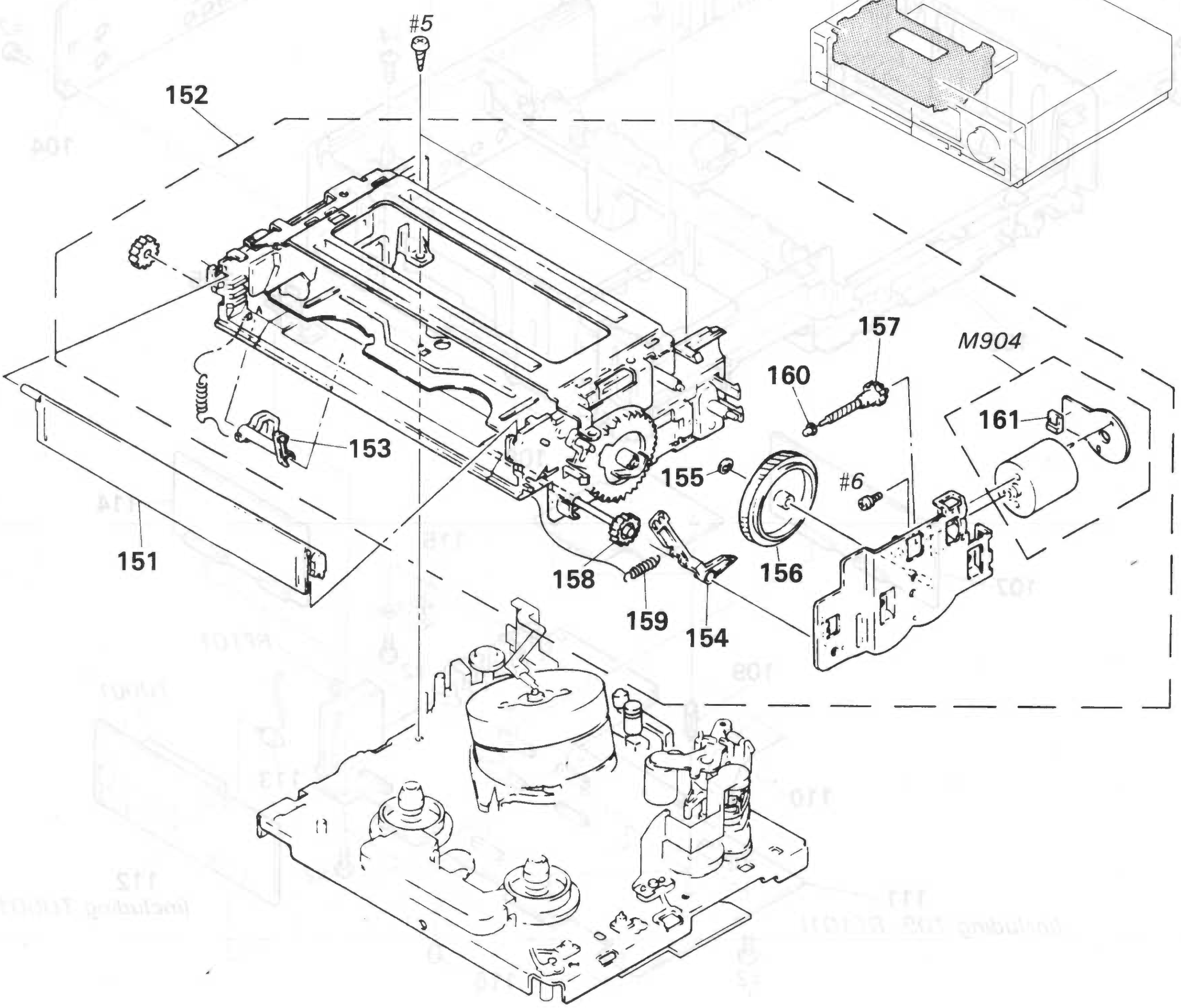
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description	Remark
* 101	3-741-992-01	STOPPER, UPPER CASE	
102	3-703-150-11	STOPPER, WIRING	
* 103	3-944-547-01	HOLDER (1500), FRAME	
104	3-944-546-21	PLATE, ORNAMENTAL, JACK (SLV-595HF)	
104	3-944-546-31	PLATE, ORNAMENTAL, JACK (SLV-696HF)	
* 105	3-944-544-01	STOPPER (S), UPPER COVER	
* 106	3-944-543-01	CHASSIS, MOLD	
* 107	A-6754-388-A	YC-114 BOARD, COMPLETE	
* 108	A-6754-389-A	CG-14 BOARD, COMPLETE	
109	3-945-945-01	SUPPORT (DIA. 3), PCB	

Ref. No.	Part No.	Description	Remark
110	1-690-347-11	WIRE, FLAT TYPE (22 CORE)	
* 111	A-6755-322-A	MA-106 BOARD, COMPLETE (SLV-595HF)	
* 111	A-6755-325-A	MA-106 BOARD, COMPLETE (SLV-696HF)	
* 112	A-6754-426-A	TU-132 BOARD, COMPLETE	
113	1-555-110-00	CABLE, PIN	
* 114	A-6754-427-A	HF-24 BOARD, COMPLETE	
* 115	3-741-962-01	PLATE, GROUND, JMP	
116	3-682-057-11	SPACER (SMALL)	
⚠RF101	1-466-150-11	MODULATOR, RF (RFU-1025)	
⚠TU001	1-465-239-21	TUNER, ET	

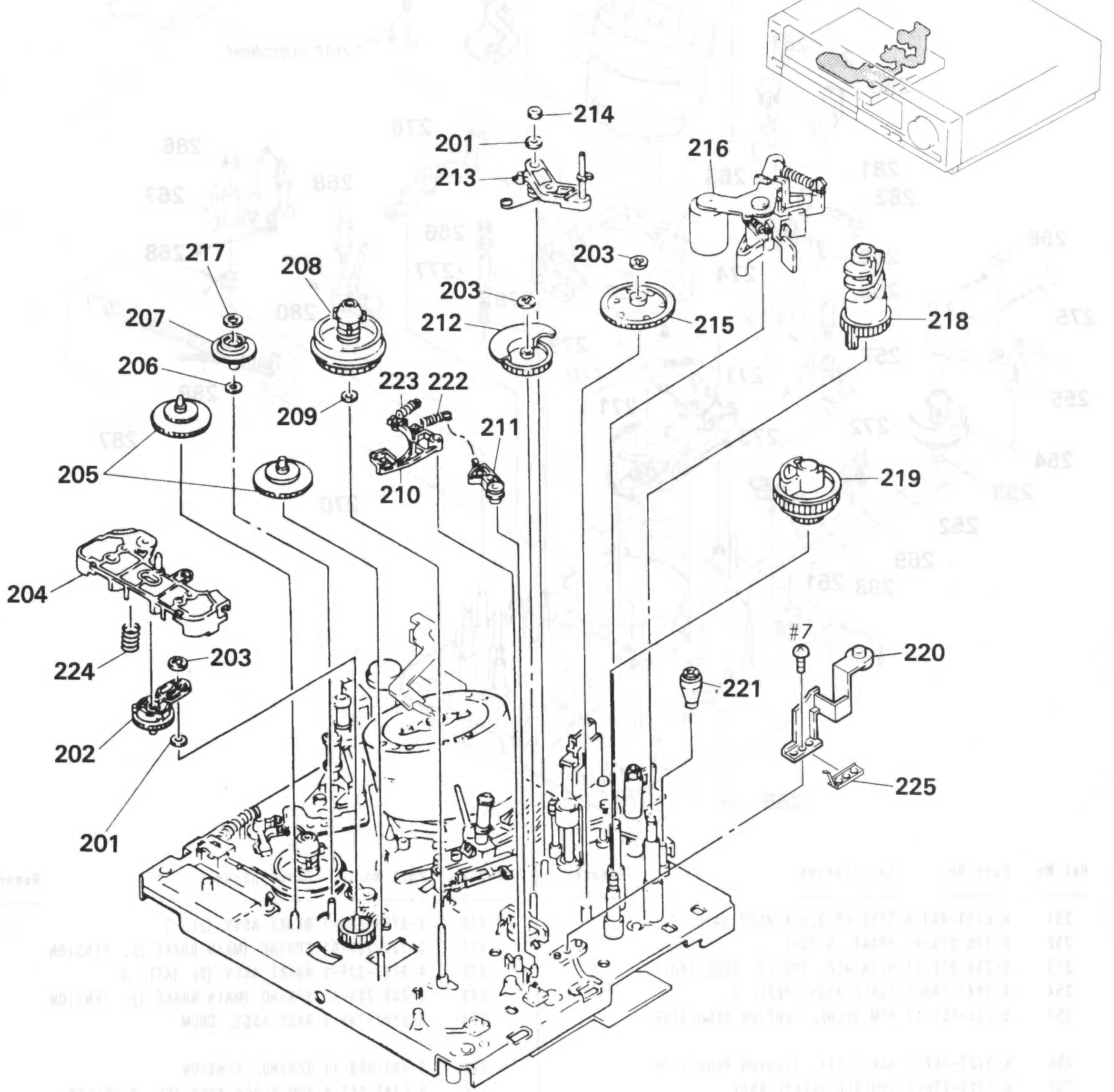
5-4. FL CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark
151	3-945-199-11	DOOR, FL	
152	A-6751-453-A	FL BLOCK ASSY	
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	3-736-167-01	ARM, DOOR SWITCHING	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	

Ref. No.	Part No.	Description	Remark
157	3-736-100-01	GEAR (FL), WORM	
158	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
159	3-738-285-01	SPRING, TENSION	
160	3-716-144-02	RETAINER, WORM	
161	1-506-482-11	CONNECTOR 3P, MALE	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	

5-5. MECHANISM CHASSIS ASSEMBLY (1)


214
201
213
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217
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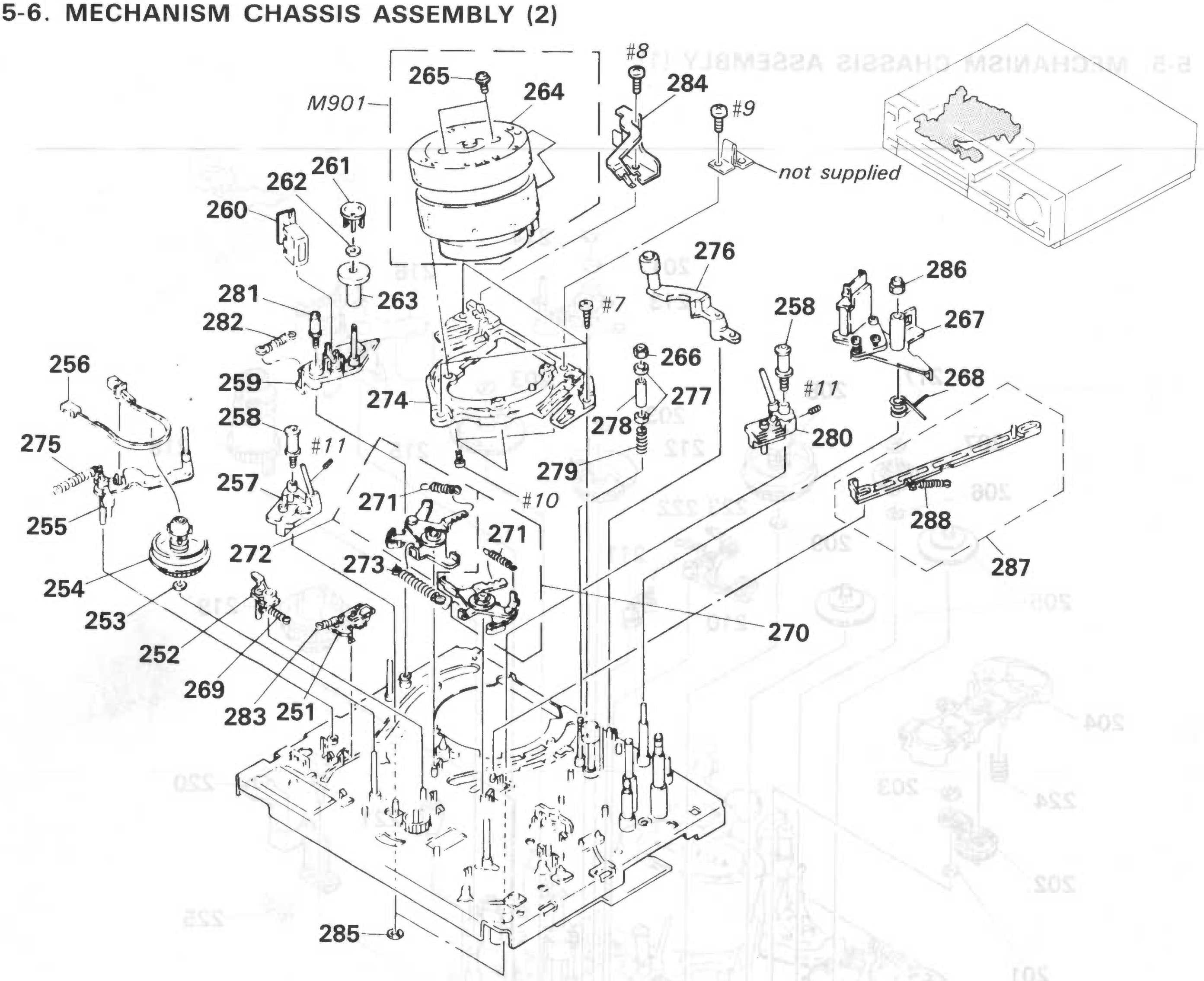
212
215
218
206
223
222
209
211
205
210
219
204
224
203
220
#7
221
202
225
201

Ref. No.	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3729-911-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-736-069-01	RETAINER, SPRING	
218	3-736-136-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR (LO), PRESS CAM	
220	3-942-828-01	OPENNER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-942-829-01	SPRING (2) (ATOM), GROUND, FL	

5-6. MECHANISM CHASSIS ASSEMBLY (2)


265
264
M901
#8
284
#9
not supplied
261
262
260
263
281
282
256
259
258
#11
274
276
#7
266
277
278
279
258
#11
280
286
267
268
288
287
275
255
257
271
#10
271
273
272
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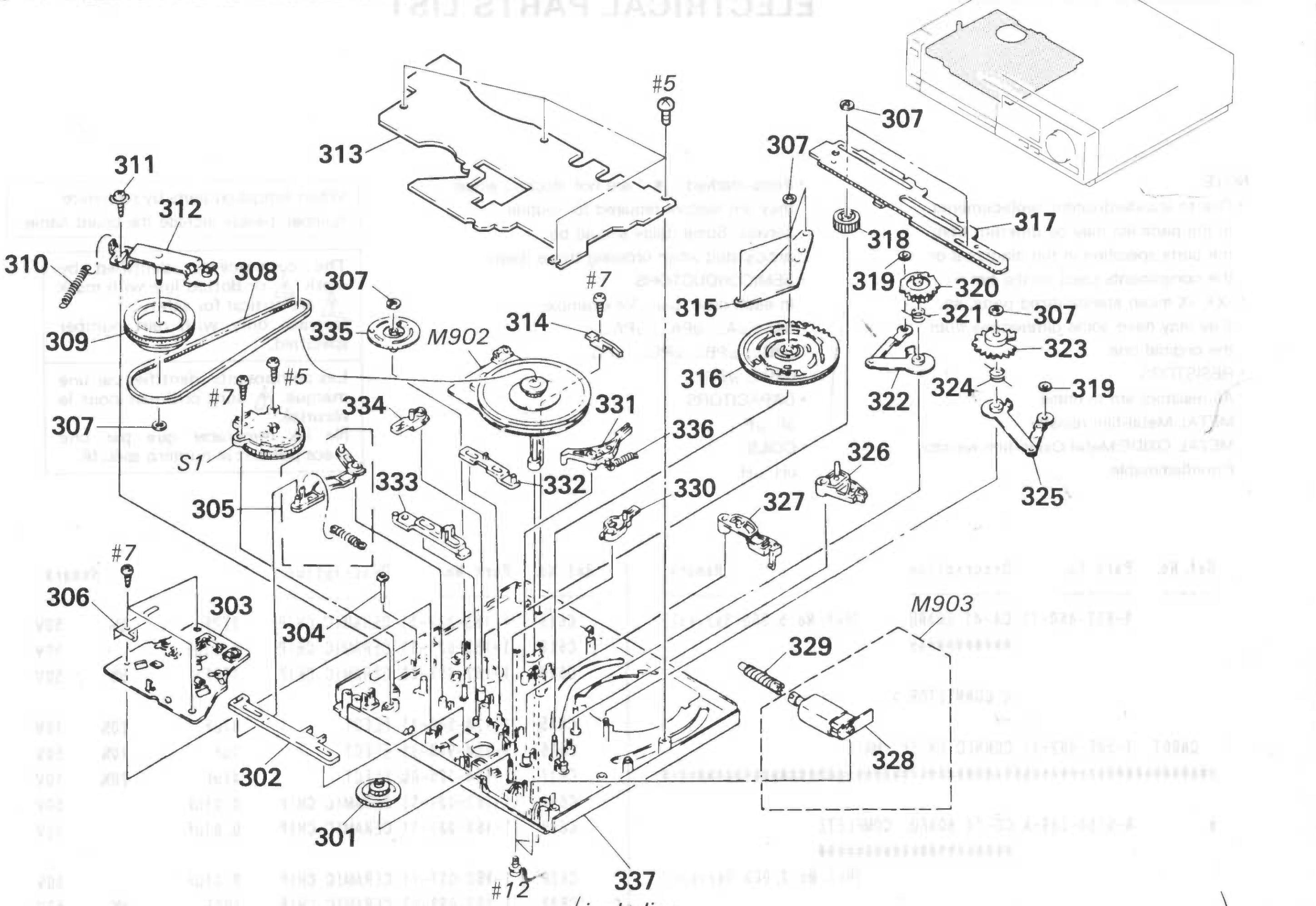
252
269
283
251
270
285

Ref. No.	Part No.	Description	Remark
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
264	8-848-581-01	DRUM ASSY, ROTARY UPPER (DZR-49-R) (SLV-696HF)	
264	8-848-583-01	DRUM ASSY, ROTARY UPPER (DZR-50-R) (SLV-595HF)	
265	2-643-205-01	SCREW (PSW) 3X8	
266	3-942-866-01	NUT (M3) (3X0.5), NYLON	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3-944-833-01	SPRING, TORSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3727-791-2	BASE ASSY, DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-944-033-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3733-304-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
287	X-3743-517-1	LEVER (S), RELEASE, C ROLLER	
288	3-736-735-03	SPRING, TENSION	
M901	8-848-580-11	DRUM ASSY (DZH-49A-R) (SLV-696HF)	
M901	8-848-582-11	DRUM ASSY (DZH-50A-R) (SLV-595HF)	

5-7. MECHANISM CHASSIS ASSEMBLY (3)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(including
201–207, 209–221, 224, 225, 251–253, 255–258,
266, 268, 275, 277–280, 283, 285, 286, 301, 302,
304, 307–312, 315–327, 330–336, S1)

Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
* 303	A-6739-096-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3940-646-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3940-645-1	ARM ASSY, ADJUSTMENT	
* 313	A-6754-303-A	MD-54 BOARD, COMPLETE	
314	3-736-744-01	RETAINER, ROTOR	
315	3-733-396-01	HOLDER, CAM GEAR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
* 328	1-633-460-11	CA-41 BOARD	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-738-237-01	SPRING (CAP BRAKE), TENSION	
* 337	A-6773-508-A	MD BLOCK ASSY	
M902	8-835-469-01	MOTOR, DC U-26J (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
S1	1-692-062-21	SWITCH, ROTARY	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- RESISTORS
  All resistors are in ohms
  METAL:Metal-film resistor
  METAL OXIDE:Metal Oxide-film resistor
  F:nonflammable
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indication parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description			Remark
	1-633-460-11	CA-41 BOARD	(Ref.No 5,000 Series)		
		***********			
		< CONNECTOR >			
CN001	1-506-482-11	CONNECTOR 3P, MALE			

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Ref. No.	Part No.	Description			Remark
*	A-6754-389-A	CG-14 BOARD, COMPLETE			
		*********************			
			(Ref.No 3,000 Series)		
		< CAPACITOR >			
C403	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C404	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C405	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C406	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C407	1-124-925-11	ELECT	2.2uF	20%	100V
C408	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C409	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C410	1-124-638-11	ELECT	22uF	20%	10V
C421	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C422	1-130-489-00	MYLAR	0.033uF	5%	50V
C423	1-124-925-11	ELECT	2.2uF	20%	100V
C424	1-130-485-00	MYLAR	0.015uF	5%	50V
C601	1-124-034-51	ELECT	33uF	20%	16V
C602	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C604	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C605	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C606	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C607	1-126-301-11	ELECT	1uF	20%	50V
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C609	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C610	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C611	1-163-097-00	CERAMIC CHIP	15PF	5%	50V

Ref. No.	Part No.	Description			Remark
C612	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C613	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C614	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C615	1-124-589-11	ELECT	47uF	20%	16V
C616	1-124-903-11	ELECT	1uF	20%	50V
C617	1-124-126-00	ELECT	47uF	20%	10V
C618	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C619	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C620	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C622	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C623	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C624	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C625	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C626	1-124-927-11	ELECT	4.7uF	20%	100V
C627	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C628	1-124-126-00	ELECT	47uF	20%	10V
C629	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
		< CONNECTOR >			
* CN601	1-563-312-11	CONNECTOR, BOARD TO BOARD 12P			
* CN602	1-563-529-11	CONNECTOR, BOARD TO BOARD 9P			
		< DIODE>			
D420	8-719-101-43	DIODE	RD4.3E-L2		
D490	8-719-911-19	DIODE	1SS119		
D491	8-719-911-19	DIODE	1SS119		
D603	8-719-911-19	DIODE	1SS119		
D604	8-719-911-19	DIODE	1SS119		
		< IC >			
IC420	8-759-908-17	IC	TL082CPS		
IC601	8-759-996-03	IC	LVA519S		
IC602	8-759-056-22	IC	M50555-058SP		

Ref. No.	Part No.	Description			Remark
		< JUMPER RESISTOR >			
JR205	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L401	1-410-521-11	INDUCTOR	100uH		
L402	1-410-519-11	INDUCTOR	68uH		
L602	1-412-470-21	INDUCTOR	22uH		
L603	1-410-521-11	INDUCTOR	100uH		
L605	1-410-524-41	INDUCTOR	180uH		
L606	1-410-524-41	INDUCTOR	180uH		
L607	1-410-316-11	INDUCTOR	1uH		
L608	1-410-316-11	INDUCTOR	1uH		
		< TRANSISTOR >			
Q401	8-729-422-28	TRANSISTOR	2SD601A-R		
Q403	8-729-422-28	TRANSISTOR	2SD601A-R		
Q405	8-729-422-37	TRANSISTOR	2SB709A-R		
Q406	8-729-421-19	TRANSISTOR	UN2213		
Q407	8-729-422-28	TRANSISTOR	2SD601A-R		
Q603	8-729-422-37	TRANSISTOR	2SB709A-R		
Q604	8-729-424-18	TRANSISTOR	UN2113		
Q605	8-729-422-28	TRANSISTOR	2SD601A-R		
Q606	8-729-422-37	TRANSISTOR	2SB709A-R		
Q607	8-729-422-28	TRANSISTOR	2SD601A-R		
		< RESISTOR >			
R401	1-249-421-11	CARBON	2.2K	5%	1/4W
R402	1-249-421-11	CARBON	2.2K	5%	1/4W
R403	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R404	1-216-037-00	METAL CHIP	330	5%	1/10W
R405	1-216-035-00	METAL CHIP	270	5%	1/10W
R406	1-216-073-00	METAL CHIP	10K	5%	1/10W
R407	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R408	1-216-041-00	METAL CHIP	470	5%	1/10W
R409	1-216-033-00	METAL CHIP	220	5%	1/10W
R410	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R411	1-216-073-00	METAL CHIP	10K	5%	1/10W
R412	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R413	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R414	1-216-049-00	METAL CHIP	1K	5%	1/10W
R421	1-216-049-00	METAL CHIP	1K	5%	1/10W
R422	1-216-748-11	METAL CHIP	39K	1%	1/10W
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W
R425	1-216-103-00	METAL CHIP	180K	5%	1/10W
R601	1-216-073-00	METAL CHIP	10K	5%	1/10W
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W
R603	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R604	1-216-083-00	METAL CHIP	27K	5%	1/10W
R605	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R606	1-216-678-11	METAL CHIP	13K	0.5%	1/10W
R607	1-216-121-00	METAL CHIP	1M	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R610	1-216-041-00	METAL CHIP	470	5%	1/10W
R611	1-216-041-00	METAL CHIP	470	5%	1/10W
R612	1-216-049-00	METAL CHIP	1K	5%	1/10W
R613	1-216-041-00	METAL CHIP	470	5%	1/10W
R614	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R615	1-216-043-00	METAL CHIP	560	5%	1/10W
R617	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R618	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R619	1-216-081-00	METAL CHIP	22K	5%	1/10W
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W
R621	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R622	1-216-043-00	METAL CHIP	560	5%	1/10W
R623	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R624	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R625	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R626	1-216-121-00	METAL CHIP	1M	5%	1/10W
R627	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R628	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R629	1-216-073-00	METAL CHIP	10K	5%	1/10W
R630	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R631	1-216-045-00	METAL CHIP	680	5%	1/10W
R632	1-216-041-00	METAL CHIP	470	5%	1/10W
R633	1-216-049-00	METAL CHIP	1K	5%	1/10W
R634	1-216-085-00	METAL CHIP	33K	5%	1/10W
R635	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< CRYSTAL >			
X601	1-577-381-11	VIBRATOR, CRYSTAL (14.32MHz)			

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A-6754-427-A HF-24 BOARD, COMPLETE
****
(Ref. No 3,000 Series)

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C204	1-126-101-11	ELECT	100uF	20%	16V
C205	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C206	1-124-925-11	ELECT	2.2uF	20%	100V
C207	1-124-126-00	ELECT	47uF	20%	10V
C208	1-124-927-11	ELECT	4.7uF	20%	100V
C209	1-124-907-11	ELECT	10uF	20%	50V
C212	1-124-126-00	ELECT	47uF	20%	10V
C213	1-124-126-00	ELECT	47uF	20%	10V

Ref. No.	Part No.	Description			Remark
C214	1-124-126-00	ELECT	47uF	20%	10V
C215	1-124-907-11	ELECT	10uF	20%	50V
C216	1-124-927-11	ELECT	4.7uF	20%	100V
C217	1-124-925-11	ELECT	2.2uF	20%	100V
C218	1-124-925-11	ELECT	2.2uF	20%	100V
C219	1-124-907-11	ELECT	10uF	20%	50V
C221	1-137-370-11	FILM	0.01uF	5%	50V
C222	1-124-927-11	ELECT	4.7uF	20%	100V
C223	1-126-176-11	ELECT	220uF	20%	10V
C224	1-124-925-11	ELECT	2.2uF	20%	100V
C225	1-137-372-11	FILM	0.022uF	5%	50V
C226	1-124-907-11	ELECT	10uF	20%	50V
C227	1-126-233-11	ELECT	22uF	20%	50V
C228	1-137-365-11	FILM	0.0015uF	5%	50V
C229	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C230	1-137-366-11	FILM	0.0022uF	5%	50V
C231	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C232	1-124-443-00	ELECT	100uF	20%	10V
C233	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C234	1-124-903-11	ELECT	1uF	20%	50V
C235	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C236	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C237	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C239	1-137-366-11	FILM	0.0022uF	5%	50V
C240	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C241	1-137-365-11	FILM	0.0015uF	5%	50V
C242	1-126-233-11	ELECT	22uF	20%	50V
C243	1-124-925-11	ELECT	2.2uF	20%	100V
C244	1-124-907-11	ELECT	10uF	20%	50V
C245	1-137-372-11	FILM	0.022uF	5%	50V
C246	1-124-925-11	ELECT	2.2uF	20%	100V
C247	1-126-176-11	ELECT	220uF	20%	10V
C248	1-124-927-11	ELECT	4.7uF	20%	100V
C249	1-137-370-11	FILM	0.01uF	5%	50V
C250	1-163-031-11	CERAMIC CHIP	0.01uF		50V

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< CONNECTOR >

CN201	1-573-834-11	CONNECTOR, BOARD TO BOARD	20P
CN202	1-573-826-11	CONNECTOR, BOARD TO BOARD	12P

< DIODE >

D201	8-719-911-19	DIODE	1SS119

< IC >

IC201	8-759-057-63	IC	AN3937NFBP

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
JR203	1-216-295-00	METAL CHIP	0	5%	1/10W
JR204	1-216-295-00	METAL CHIP	0	5%	1/10W
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W
JR302	1-216-295-00	METAL CHIP	0	5%	1/10W
JR303	1-216-296-00	METAL CHIP	0	5%	1/8W
JR304	1-216-295-00	METAL CHIP	0	5%	1/10W
JR305	1-216-296-00	METAL CHIP	0	5%	1/8W
JR306	1-216-296-00	METAL CHIP	0	5%	1/8W
JR307	1-216-296-00	METAL CHIP	0	5%	1/8W
JR308	1-216-296-00	METAL CHIP	0	5%	1/8W
JR309	1-216-296-00	METAL CHIP	0	5%	1/8W
JR310	1-216-296-00	METAL CHIP	0	5%	1/8W

< RESISTOR >

R201	1-249-417-11	CARBON	1K	5%	1/4W
R202	1-249-417-11	CARBON	1K	5%	1/4W
R209	1-216-109-00	METAL CHIP	330K	5%	1/10W
R212	1-216-049-00	METAL CHIP	1K	5%	1/10W
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W
R216	1-216-049-00	METAL CHIP	1K	5%	1/10W
R218	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R219	1-216-073-00	METAL CHIP	10K	5%	1/10W
R220	1-216-074-00	METAL CHIP	11K	5%	1/10W
R221	1-216-049-00	METAL CHIP	1K	5%	1/10W
R222	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R223	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R224	1-216-083-00	METAL CHIP	27K	5%	1/10W
R225	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R226	1-216-073-00	METAL CHIP	10K	5%	1/10W
R227	1-216-049-00	METAL CHIP	1K	5%	1/10W
R228	1-216-109-00	METAL CHIP	330K	5%	1/10W

< VARIABLE RESISTOR >

RV201	1-241-628-11	RES, ADJ, CARBON	2.2K
RV202	1-230-523-11	RES, ADJ, METAL	10K
RV203	1-241-120-11	RES, ADJ, CARBON	2.2K
RV204	1-241-630-11	RES, ADJ, CARBON	10K
RV205	1-230-522-11	RES, ADJ, METAL	4.7K
RV206	1-241-628-11	RES, ADJ, CARBON	2.2K

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A-6714-461-A

* ~~A-6755-322-A~~ MA-106 BOARD, COMPLETE(SLV-595HF)

A-6755-325-B

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* ~~A-6755-325-A MA-106~~ BOARD, COMPLETE(SLV-696HF)

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(Ref.No 2,000 Series)

3-831-441-XX	SPACER, KNOB
3-945-945-01	SUPPORT (DIA. 3), PCB

< CAPACITOR >

Ref.No.	Part No.	Description				Remark
C104	1-124-126-00	ELECT	47uF	20%	10V	
C106	1-124-126-00	ELECT	47uF	20%	10V	
C109	1-124-126-00	ELECT	47uF	20%	10V	
C106	1-124-126-00	ELECT	47uF	20%	10V	
C109	1-124-126-00	ELECT	47uF	20%	10V	
C112	1-164-096-11	CERAMIC	0.01uF		50V	
C115	1-164-096-11	CERAMIC	0.01uF		50V	
C116	1-124-126-00	ELECT	47uF	20%	10V	
C117	1-124-472-11	ELECT	470uF	20%	10V	
C118	1-124-126-00	ELECT	47uF	20%	10V	
C201	1-124-907-11	ELECT	10uF	20%	50V	
C202	1-124-907-11	ELECT	10uF	20%	50V	
C203	1-124-907-11	ELECT	10uF	20%	50V	
C204	1-124-907-11	ELECT	10uF	20%	50V	
C205	1-124-126-00	ELECT	47uF	20%	10V	
C206	1-124-261-00	ELECT	10uF	20%	50V	
C207	1-124-261-00	ELECT	10uF	20%	50V	
C208	1-124-907-11	ELECT	10uF	20%	50V	
C209	1-124-261-00	ELECT	10uF	20%	50V	
C212	1-124-261-00	ELECT	10uF	20%	50V	
C250	1-124-907-11	ELECT	10uF	20%	50V	
C301	1-124-903-11	ELECT	1uF	20%	50V	
C302	1-124-126-00	ELECT	47uF	20%	10V	
C303	1-124-589-11	ELECT	47uF	20%	16V	
C304	1-126-301-11	ELECT	1uF	20%	50V	
C305	1-130-485-00	FILM	0.015uF	5%	50V	
C306	1-130-491-00	MYLAR	0.047uF	5%	50V	
C307	1-124-927-11	ELECT	4.7uF	20%	100V	
C308	1-124-589-11	ELECT	47uF	20%	16V	
C309	1-124-126-00	ELECT	47uF	20%	10V	
C310	1-164-083-11	CERAMIC	680PF	10%	50V	
C311	1-164-093-11	CERAMIC	0.0047uF	10%	25V	
C312	1-124-252-00	ELECT	0.33uF	20%	50V	
C313	1-124-903-11	ELECT	1uF	20%	50V	
C314	1-130-483-00	FILM	0.01uF	5%	50V	
C315	1-124-126-00	ELECT	47uF	20%	10V	
C316	1-164-083-11	CERAMIC	680PF	10%	50V	
C317	1-124-903-11	ELECT	1uF	20%	50V	
C318	1-126-233-11	ELECT	22uF	20%	50V	
C319	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C324	1-136-559-11	FILM	0.0047uF	10%	630V	(SLV-595HF)
C324	1-136-561-11	FILM	0.0068uF	10%	400V	(SLV-696HF)
C325	1-164-087-11	CERAMIC	0.0015uF	10%	50V	
C326	1-164-095-11	CERAMIC	0.01uF	10%	16V	
C336	1-124-261-00	ELECT	10uF	20%	50V	
C337	1-124-261-00	ELECT	10uF	20%	50V	
C344	1-124-257-00	ELECT	2.2uF	20%	50V	
C345	1-124-257-00	ELECT	2.2uF	20%	50V	
C351	1-124-261-00	ELECT	10uF	20%	50V	
C411	1-130-491-00	MYLAR	0.047uF	5%	50V	
C415	1-124-489-11	ELECT	47uF	20%	16V	
C417	1-124-443-00	ELECT	100uF	20%	10V	
C418	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C419	1-161-047-00	CERAMIC	0.0047uF	10%	50V	
C420	1-164-098-11	CERAMIC	0.047uF		12V	
C421	1-124-126-00	ELECT	47uF	20%	10V	
C422	1-162-849-11	CERAMIC	0.068uF	10%	16V	
C423	1-124-248-00	ELECT	22uF	20%	35V	
C424	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C425	1-124-257-00	ELECT	2.2uF	20%	50V	
C508	1-126-101-11	ELECT	100uF	20%	16V	
C510	1-164-096-11	CERAMIC	0.01uF		50V	
C511	1-124-443-00	ELECT	100uF	20%	10V	
C513	1-124-126-00	ELECT	47uF	20%	10V	
C514	1-164-052-11	CERAMIC	18PF	5%	50V	
C516	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C517	1-164-096-11	CERAMIC	0.01uF		50V	
C520	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C522	1-164-052-11	CERAMIC	18PF	5%	50V	
C523	1-161-057-00	CERAMIC	0.033uF	10%	50V	
C540	1-124-925-11	ELECT	2.2uF	20%	100V	
C560	1-164-159-11	CERAMIC	0.1uF		50V	

< JACK >

Ref.No.	Part No.	Description
CNJ005	1-507-562-00	JACK (CONTROL S IN)

< CONNECTOR >

Ref.No.	Part No.	Description
* CN001	1-568-786-11	PIN, CONNECTOR 9P
CN002	1-506-470-11	CONNECTOR 5P, MALE
CN003	1-563-599-11	CONNECTOR, FLEXIBLE 22P
CN005	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P
CN006	1-569-339-11	CONNECTOR, BOARD TO BOARD 7P
CN007	1-573-844-11	CONNECTOR, BOARD TO BOARD 12P
* CN008	1-508-742-00	PIN, CONNECTOR 3P
CN009	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P
CN010	1-573-844-11	CONNECTOR, BOARD TO BOARD 12P
CN011	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P
* CN012	1-506-775-11	CONNECTOR, BOARD TO BOARD 12P
* CN013	1-508-797-00	PIN, CONNECTOR 4P
* CN014	1-508-742-00	PIN, CONNECTOR 3P (SLV-595HF)
* CN015	1-560-894-00	PIN, CONNECTOR 6P
CN016	1-573-844-11	CONNECTOR, BOARD TO BOARD 12P

MA-106

Ref. No.	Part No.	Description	Remark
CN017	1-573-844-11	CONNECTOR, BOARD TO BOARD 12P	
* CN018	1-568-790-11	PIN, CONNECTOR 13P	
CN020	1-580-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN021	1-691-276-11	CONNECTOR, BOARD TO BOARD 13P	
CN022	1-566-126-11	CONNECTOR, BOARD TO BOARD 9P	
CNJ001	1-565-351-41	JACK, PIN 3P (LINE IN1)	
CNJ002	1-565-351-41	JACK, PIN 3P (LINE OUT)	
		< DIODE >	
D202	8-719-911-19	DIODE 1SS119	
D203	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	
D331	8-719-911-19	DIODE 1SS119	
D332	8-719-911-19	DIODE 1SS119	
D333	8-719-911-19	DIODE 1SS119	
D334	8-719-911-19	DIODE 1SS119	
D401	8-719-911-19	DIODE 1SS119	
D410	8-719-101-47	DIODE RD4.7E-L2	
D501	8-719-911-19	DIODE 1SS119	
D502	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D506	8-719-911-19	DIODE 1SS119	
D507	~~8-719-200-82~~	DIODE ~~11ES2~~ 8-719-986-73 RB441Q	
D521	8-719-109-60	DIODE RD2.7ES-B2	
		< IC >	
IC102	8-759-511-44	IC LVA522SA	
IC201	8-759-520-50	IC BH7733S	
IC301	8-759-805-20	IC LA7297	
IC304	8-759-632-94	IC M5223L	
IC402	8-759-246-14	IC TA8823N	
⚠IC501	8-759-983-45	IC BA6238A	
IC502	8-752-835-23	IC CXP80724-027Q	
		< COIL >	
L101	1-410-521-11	INDUCTOR 100uH	
L102	1-410-971-11	INDUCTOR 10uH	
L301	1-410-089-11	INDUCTOR 15mH	
L302	1-410-120-11	INDUCTOR 1.2mH	
L403	1-410-521-11	INDUCTOR 100uH	
L501	1-410-971-11	INDUCTOR 10uH	
L607	1-410-316-11	INDUCTOR 1uH	
L608	1-410-316-11	INDUCTOR 1uH	
		< TRANSISTOR >	
Q101	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q210	8-729-423-35	TRANSISTOR 2SC3311A-R	
Q211	8-729-209-15	TRANSISTOR 2SD2012	
⚠Q301	8-729-140-96	TRANSISTOR 2SD774-34	

Ref. No.	Part No.	Description	Remark
⚠Q302	8-729-140-97	TRANSISTOR 2SB734-34	(SLV-696HF)
Q304	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q305	8-729-102-14	TRANSISTOR 2SD1021-F	
Q306	8-729-102-14	TRANSISTOR 2SD1021-F	
Q502	8-729-422-71	TRANSISTOR UN411L	
Q510	8-729-900-65	TRANSISTOR DTA144ES	
Q511	8-729-900-89	TRANSISTOR DTC144ES	
		< RESISTOR >	
R101	1-249-401-11	CARBON 47 5% 1/4W	
R108	1-249-406-11	CARBON 120 5% 1/4W	
R109	1-249-405-11	CARBON 100 5% 1/4W	
R110	1-249-403-11	CARBON 68 5% 1/4W	
R111	1-247-804-11	CARBON 75 5% 1/4W	
R117	1-249-417-11	CARBON 1K 5% 1/4W	
R204	1-249-436-11	CARBON 39K 5% 1/4W	
R205	1-249-437-11	CARBON 47K 5% 1/4W	
R207	1-249-429-11	CARBON 10K 5% 1/4W	
R208	1-249-429-11	CARBON 10K 5% 1/4W	
R211	1-249-436-11	CARBON 39K 5% 1/4W	
R212	1-249-437-11	CARBON 47K 5% 1/4W	
R213	1-249-436-11	CARBON 39K 5% 1/4W	
R218	1-249-436-11	CARBON 39K 5% 1/4W	
R227	1-249-414-11	CARBON 560 5% 1/4W	
R228	1-249-414-11	CARBON 560 5% 1/4W	
R231	1-249-414-11	CARBON 560 5% 1/4W	
R232	1-249-414-11	CARBON 560 5% 1/4W	
R260	1-249-423-11	CARBON 3.3K 5% 1/4W	
R262	1-249-424-11	CARBON 3.9K 5% 1/4W	
R280	1-249-416-11	CARBON 820 5% 1/4W	
R281	1-249-426-11	CARBON 5.6K 5% 1/4W	
R301	1-249-429-11	CARBON 10K 5% 1/4W	
R302	1-249-433-11	CARBON 22K 5% 1/4W	
R303	1-249-429-11	CARBON 10K 5% 1/4W	
R304	1-249-412-11	CARBON 390 5% 1/4W	
R305	1-249-422-11	CARBON 2.7K 5% 1/4W	
R306	1-249-428-11	CARBON 8.2K 5% 1/4W	
R307	1-249-415-11	CARBON 680 5% 1/4W	
R308	1-249-393-11	CARBON 10 5% 1/4W	
R309	1-249-430-11	CARBON 12K 5% 1/4W	
R310	1-249-437-11	CARBON 47K 5% 1/4W	
R311	1-249-412-11	CARBON 390 5% 1/4W	
R312	1-247-885-00	CARBON 180K 5% 1/4W	
R313	1-249-411-11	CARBON 330 5% 1/4W	
R314	1-247-854-11	CARBON 9.1K 5% 1/4W	
R315	1-249-434-11	CARBON 27K 5% 1/4W	
R316	1-249-434-11	CARBON 27K 5% 1/4W	
R317	1-247-903-00	CARBON 1M 5% 1/4W	
R318	1-249-432-11	CARBON 18K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description				Remark
R319	1-249-427-11	CARBON	6.8K	5%	1/4W	
R321	1-249-416-11	CARBON	820	5%	1/4W	
R329	1-249-429-11	CARBON	10K	5%	1/4W	
R330	1-249-429-11	CARBON	10K	5%	1/4W	(SLV-595HF)
R330	1-249-433-11	CARBON	22K	5%	1/4W	(SLV-696HF)
R331	1-249-429-11	CARBON	10K	5%	1/4W	(SLV-696HF)
R332	1-249-433-11	CARBON	22K	5%	1/4W	(SLV-696HF)
⚠R333	1-249-387-11	CARBON	3.3	5%	1/4W	
R336	1-249-421-11	CARBON	2.2K	5%	1/4W	
R337	1-249-421-11	CARBON	2.2K	5%	1/4W	
R338	1-249-421-11	CARBON	2.2K	5%	1/4W	
R340	1-249-417-11	CARBON	1K	5%	1/4W	
R341	1-249-417-11	CARBON	1K	5%	1/4W	
R350	1-249-416-11	CARBON	820	5%	1/4W	
R351	1-249-417-11	CARBON	1K	5%	1/4W	
R362	1-247-903-00	CARBON	1M	5%	1/4W	
R363	1-247-883-00	CARBON	150K	5%	1/4W	
R364	1-249-433-11	CARBON	22K	5%	1/4W	
R365	1-249-426-11	CARBON	5.6K	5%	1/4W	
R366	1-249-433-11	CARBON	22K	5%	1/4W	
R367	1-249-433-11	CARBON	22K	5%	1/4W	
R376	1-247-883-00	CARBON	150K	5%	1/4W	
R377	1-249-433-11	CARBON	22K	5%	1/4W	
R378	1-249-426-11	CARBON	5.6K	5%	1/4W	
R379	1-247-903-00	CARBON	1M	5%	1/4W	
R380	1-249-429-11	CARBON	10K	5%	1/4W	
R381	1-249-429-11	CARBON	10K	5%	1/4W	
R398	1-249-441-11	CARBON	100K	5%	1/4W	
R399	1-249-441-11	CARBON	100K	5%	1/4W	
R401	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R402	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R427	1-249-429-11	CARBON	10K	5%	1/4W	
R428	1-215-421-00	METAL FILM	1K	1%	1/4W	
R430	1-215-429-00	METAL FILM	2.2K	1%	1/4W	
R432	1-249-405-11	CARBON	100	5%	1/4W	
R434	1-249-441-11	CARBON	100K	5%	1/4W	
R435	1-247-901-11	CARBON	820K	5%	1/4W	
R436	1-249-411-11	CARBON	330	5%	1/4W	
R438	1-249-435-11	CARBON	33K	5%	1/4W	
R439	1-249-439-11	CARBON	68K	5%	1/4W	
R440	1-249-425-11	CARBON	4.7K	5%	1/4W	
R441	1-249-441-11	CARBON	100K	5%	1/4W	
R499	1-249-429-11	CARBON	10K	5%	1/4W	
R501	1-215-463-00	METAL	56K	1%	1/6W	
R503	1-215-431-00	METAL	2.7K	1%	1/6W	
R504	1-249-430-11	CARBON	12K	5%	1/4W	
R506	1-249-417-11	CARBON	1K	5%	1/4W	
R510	1-249-425-11	CARBON	4.7K	5%	1/4W	
R512	1-249-429-11	CARBON	10K	5%	1/4W	
R513	1-249-429-11	CARBON	10K	5%	1/4W	
R514	1-249-429-11	CARBON	10K	5%	1/4W	
R517	1-249-437-11	CARBON	47K	5%	1/4W	
R518	1-249-437-11	CARBON	47K	5%	1/4W	
R519	1-249-421-11	CARBON	2.2K	5%	1/4W	
R525	1-249-422-11	CARBON	2.7K	5%	1/4W	
R527	1-249-436-11	CARBON	39K	5%	1/4W	
R528	1-249-431-11	CARBON	15K	5%	1/4W	
R529	1-249-431-11	CARBON	15K	5%	1/4W	
R530	1-249-429-11	CARBON	10K	5%	1/4W	
R540	1-249-421-11	CARBON	2.2K	5%	1/4W	

< RF MODULATOR >

Ref. No.	Part No.	Description
⚠RF101	1-466-150-11	MODULATOR, RF (RFU-1025)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV301	1-238-021-11	RES, ADJ, CARBON 220K
RV501	1-241-632-11	RES, ADJ, CARBON 47K
RV502	1-241-632-11	RES, ADJ, CARBON 47K

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T301	1-433-330-11	TRANSFORMER, BIAS OSCILLATION	(SLV-595HF)
T301	1-433-352-11	TRANSFORMER, BIAS OSCILLATION	(SLV-696HF)

< CRYSTAL >

Ref. No.	Part No.	Description
X501	1-578-774-11	VIBRATOR, CRYSTAL (12MHz)

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* A-6754-303-A MD-54 BOARD, COMPLETE

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(Ref. No 3,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			
C001	1-161-494-00	CERAMIC	0.022uF		25V
C002	1-161-494-00	CERAMIC	0.022uF		25V
C003	1-126-157-11	ELECT	10uF	20%	16V
C004	1-161-379-00	CERAMIC	0.01uF	20%	25V
C006	1-124-589-11	ELECT	47uF	20%	16V
C008	1-164-159-11	CERAMIC	0.1uF		50V
C009	1-164-159-11	CERAMIC	0.1uF		50V
C025	1-162-294-31	CERAMIC	0.001uF	10%	50V
C026	1-162-294-31	CERAMIC	0.001uF	10%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN003	1-691-643-11	CONNECTOR, BOARD TO BOARD
CN004	1-563-625-11	CONNECTOR, FLEXIBLE 22P
CN005	1-506-482-11	CONNECTOR 3P, MALE
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D001	8-719-985-00	DIODE GL451VS1	
D005	8-719-109-93	DIODE RD6.2ES-B2	
D006	8-719-109-93	DIODE RD6.2ES-B2	
D007	8-719-109-93	DIODE RD6.2ES-B2	
D008	8-719-109-93	DIODE RD6.2ES-B2	
		< IC >	
IC002	8-759-912-77	IC LM324N	
		< COIL >	
L001	1-410-316-11	INDUCTOR 1uH	
L002	1-410-316-11	INDUCTOR 1uH	
		< PHOTO INTERRUPTER >	
PH001	8-759-144-33	IC PS6002	
PH002	8-759-144-33	IC PS6002	
		< TRANSISTOR >	
Q002	8-729-926-31	TRANSISTOR PT483F1S	
Q003	8-729-926-31	TRANSISTOR PT483F1S	
		< RESISTOR >	
R001	1-249-423-11	CARBON 3.3K 5% 1/4W	
R002	1-249-423-11	CARBON 3.3K 5% 1/4W	
R003	1-249-426-11	CARBON 5.6K 5% 1/4W	
R004	1-249-426-11	CARBON 5.6K 5% 1/4W	
R005	1-249-417-11	CARBON 1K 5% 1/4W	
R006	1-249-441-11	CARBON 100K 5% 1/4W	
R007	1-249-441-11	CARBON 100K 5% 1/4W	
R008	1-249-425-11	CARBON 4.7K 5% 1/4W	
R009	1-249-408-11	CARBON 180 5% 1/4W	
R010	1-249-422-11	CARBON 2.7K 5% 1/4W	
R011	1-249-437-11	CARBON 47K 5% 1/4W	
R012	1-249-421-11	CARBON 2.2K 5% 1/4W	
R015	1-249-437-11	CARBON 47K 5% 1/4W	
R016	1-249-421-11	CARBON 2.2K 5% 1/4W	
R017	1-249-429-11	CARBON 10K 5% 1/4W	
R018	1-249-429-11	CARBON 10K 5% 1/4W	
R019	1-249-429-11	CARBON 10K 5% 1/4W	
R020	1-249-429-11	CARBON 10K 5% 1/4W	
R023	1-249-414-11	CARBON 560 5% 1/4W	
		< SWITCH >	
S002	1-570-953-11	SWITCH, PUSH (1 KEY)(REC PROOF)	
S004	1-570-953-11	SWITCH, PUSH (1 KEY)(C-DOWN)	

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Ref. No.	Part No.	Description	Remark
	A-6756-638-A		
*	~~A-6721-440~~-A	MF-140 BOARD, COMPLETE (SLV-595HF)	
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*	~~A-6721-442~~-A	MF-140 BOARD, COMPLETE (SLV-696HF)	
		**********************	
	A-6721-442-B		(Ref. No 1,000 Series)
*	3-944-574-01	HOLDER, FL	
		< BUZZER >	
BZ901	1-529-080-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C903	1-164-056-11	CERAMIC 27PF 5% 50V	
C904	1-125-705-11	CAP, DOUBLE LAYERS 0.22F	
C905	1-164-159-11	CERAMIC 0.1uF 50V	
C906	1-126-177-11	ELECT 100uF 20% 10V	
C912	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C913	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C914	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C930	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
		< CERAMIC VIBRATOR >	
CF901	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	
		< CONNECTOR >	
CN901	1-691-277-11	CONNECTOR, BOARD TO BOARD 13P	
CN902	1-580-846-11	CONNECTOR, BOARD TO BOARD 15P	
CN903	1-562-631-11	SOCKET, CONNECTOR	
CN904	1-691-247-11	CONNECTOR, BOARD TO BOARD 9P	
CN905	1-568-670-11	CONNECTOR, BOARD TO BOARD 9P	
CN906	1-506-486-11	PIN, CONNECTOR 7P	
CN907	1-568-670-11	CONNECTOR, BOARD TO BOARD 9P	
		< TRIMMER >	
CT901	1-141-227-00	CAP, TRIMMER 20PF	
		< DIODE >	
D901	~~8-719-911-19~~	DIODE ~~1SS119~~ RB441Q 8-719-986-73	
D902	~~8-719-911-19~~	DIODE ~~1SS119~~ 8-719-986-73	
D903	8-719-110-08	DIODE RD8.2ES-B2	
D907	8-719-108-12	DIODE RD9.1E-W	
D908	8-719-108-12	DIODE RD9.1E-W	
D909	8-719-108-12	DIODE RD9.1E-W	
D914	8-719-109-93	DIODE RD6.2ES-B2	
D915	8-719-109-93	DIODE RD6.2ES-B2	
		< FILTER >	
FL901	1-519-706-11	INDICATOR TUBE, FLUORESCENT	

4415 7373

Ref.No.	Part No.	Description	Remark
		< IC >	
IC901	8-752-835-36	IC CXP50124-017Q	
IC902	8-759-510-43	IC PST572C	
IC903	8-759-515-58	IC PST572H	
IC905	8-759-996-59	IC CAT35C102P	
		< JUMPER RESISTOR >	
JR901	1-216-296-00	METAL CHIP 0 5%	1/8W
		< COIL >	
L901	1-410-521-11	INDUCTOR 100uH	
L902	1-410-314-11	INDUCTOR 0.47uH	
L903	1-410-314-11	INDUCTOR 0.47uH	
		< RESISTOR >	
R902	1-216-113-00	METAL CHIP 470K 5%	1/10W
R903	1-249-425-11	CARBON 4.7K 5%	1/4W
R904	1-249-425-11	CARBON 4.7K 5%	1/4W
R905	1-249-425-11	CARBON 4.7K 5%	1/4W
R906	1-249-425-11	CARBON 4.7K 5%	1/4W
R914	1-249-427-11	CARBON 6.8K 5%	1/4W
R918	1-216-049-00	METAL CHIP 1K 5%	1/10W
R919	1-216-049-00	METAL CHIP 1K 5%	1/10W
R920	1-216-049-00	METAL CHIP 1K 5%	1/10W
R921	1-249-425-11	CARBON 4.7K 5%	1/4W
R922	1-249-425-11	CARBON 4.7K 5%	1/4W
R923	1-249-425-11	CARBON 4.7K 5%	1/4W
R924	1-249-417-11	CARBON 1K 5%	1/4W
R927	1-216-049-00	METAL CHIP 1K 5%	1/10W
R929	1-216-073-00	METAL CHIP 10K 5%	1/10W
R931	1-249-437-11	CARBON 47K 5%	1/4W
R953	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R957	1-249-437-11	CARBON 47K 5%	1/4W
R958	1-216-049-00	METAL CHIP 1K 5%	1/10W
R959	1-216-049-00	METAL CHIP 1K 5%	1/10W
R960	1-216-049-00	METAL CHIP 1K 5%	1/10W
R961	1-216-049-00	METAL CHIP 1K 5%	1/10W
R963	1-249-425-11	CARBON 4.7K 5%	1/4W
R964	1-249-418-11	CARBON 1.2K 5%	1/4W
R965	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R966	1-249-437-11	CARBON 47K 5% 1/4W	(SLV-696HF)
R967	1-249-437-11	CARBON 47K 5% 1/4W	(Canadian)
R968	1-249-437-11	CARBON 47K 5% 1/4W	(SLV-595HF)
R969	1-249-437-11	CARBON 47K 5%	1/4W (US)
R970	1-216-089-00	METAL CHIP 47K 5%	1/10W
R971	1-216-089-00	METAL CHIP 47K 5%	1/10W
R972	1-249-437-11	CARBON 47K 5%	1/4W
R973	1-249-425-11	CARBON 4.7K 5%	1/4W

Ref.No.	Part No.	Description	Remark
		< SWITCH >	
S902	1-572-946-11	SWITCH, TACTIL (EJECT)	
S903	1-572-946-11	SWITCH, TACTIL (HI-SPEED REWIND)	
S904	1-572-946-11	SWITCH, TACTIL (PAUSE)	
		< CRYSTAL >	
X902	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)	

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* A-6755-321-A MF-141 BOARD, COMPLETE
(SLV-595HF/SLV-696HF;Canadian)
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* A-6755-324-A MF-141 BOARD, COMPLETE (SLV-696HF;US)
****

(Ref.No 3,000 Series)

Ref.No.	Part No.	Description	Remark
		< JACK >	
CJ601	1-580-845-11	JACK, PIN 3P (LINE IN2)	
		< CONNECTOR >	
CN601	1-568-664-11	CONNECTOR, BOARD TO BOARD 9P	
CN602	1-568-664-11	CONNECTOR, BOARD TO BOARD 9P	
		< DIODE >	
D601	8-719-992-30	DIODE SLR-305MC3F	
D602	8-719-992-30	DIODE SLR-305MC3F	
D604	8-719-911-19	DIODE 1SS119	
		< COIL >	
L601	1-410-336-11	INDUCTOR 220uH	
		< RESISTOR >	
R604	1-249-423-11	CARBON 3.3K 5%	1/4W
R605	1-249-403-11	CARBON 68 5%	1/4W
R608	1-249-427-11	CARBON 6.8K 5%	1/4W
R611	1-249-417-11	CARBON 1K 5%	1/4W
R612	1-249-417-11	CARBON 1K 5%	1/4W
R614	1-249-401-11	CARBON 47 5%	1/4W
R616	1-249-423-11	CARBON 3.3K 5%	1/4W
R617	1-249-425-11	CARBON 4.7K 5%	1/4W
R618	1-249-425-11	CARBON 4.7K 5%	1/4W
		< VARIABLE RESISTOR >	
RV601	1-230-819-11	RES, VAR, CARBON 2K (SHARPNESS)	
		< SWITCH >	
S601	1-571-977-11	SWITCH, TACTIL (POWER)	

Ref. No.	Part No.	Description	Remark
S603	1-572-907-11	SWITCH, SLIDE(COMMAND MODE)	
S605	1-572-908-11	SWITCH, SLIDE(EDIT)	
S606	1-571-977-11	SWITCH, TACTIL(CL)	

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* A-6755-406-A MF-143 BOARD, COMPLETE (SLV-696HF;US)

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* A-6755-407-A MF-143 BOARD, COMPLETE (SLV-595HF/SLV-696HF;Canadian)

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(Ref.No 1,000 Series)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN701	1-580-850-11	CONNECTOR (DMS) 8P	
CN702	1-562-088-00	SOCKET, CONNECTOR 9P	

< IC >

Ref. No.	Part No.	Description	Remark
IC701	1-466-131-21	IC GP1U52X	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R701	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R702	1-216-089-00	METAL CHIP 47K 5%	1/10W
R706	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R707	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R708	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R710	1-216-065-00	METAL CHIP 4.7K 5%	1/10W

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* A-6727-393-A RP-127 BOARD, COMPLETE (SLV-595HF)

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* A-6727-394-A RP-127 BOARD, COMPLETE (SLV-696HF)

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(Ref.No 1,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C260	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C261	1-124-584-00	ELECT 100uF 20%	10V
C262	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C263	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C264	1-124-257-00	ELECT 2.2uF 20%	50V
C265	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C267	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C270	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C273	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C274	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C275	1-126-160-11	ELECT 1uF 20%	50V
C276	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C277	1-137-075-11	FILM 0.068uF 5% 100V	(SLV-696HF)
C279	1-163-986-00	CERAMIC CHIP 0.027uF 10% 25V	(SLV-696HF)
C280	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(SLV-696HF)
C281	1-124-589-11	ELECT 47uF 20% 16V	(SLV-696HF)
C286	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(SLV-696HF)
C801	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C802	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C803	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C804	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C805	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C806	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C807	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C808	1-124-584-00	ELECT 100uF 20%	10V
C809	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C810	1-124-584-00	ELECT 100uF 20%	10V
C811	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C812	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C813	1-164-336-11	CERAMIC CHIP 0.33uF	25V
C814	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C815	1-163-077-00	CERAMIC CHIP 0.1uF 10%	25V
C816	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C817	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V
C818	1-163-104-00	CERAMIC CHIP 30PF 5%	50V
C819	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C820	1-163-115-00	CERAMIC CHIP 82PF 5%	50V
C822	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C823	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C824	1-124-126-00	ELECT 47uF 20%	10V
C826	1-124-589-11	ELECT 47uF 20%	16V
C827	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C828	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C829	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C830	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C831	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C835	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C836	1-163-090-00	CERAMIC CHIP 18PF 50V	(SLV-696HF)
C839	1-163-090-00	CERAMIC CHIP 18PF 50V	(SLV-696HF)
C890	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(SLV-696HF)
C893	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(SLV-696HF)
C894	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	(SLV-696HF)
C895	1-163-111-00	CERAMIC CHIP 56PF 5% 50V	(SLV-696HF)
C896	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(SLV-696HF)
C897	1-126-157-11	ELECT 10uF 20% 16V	(SLV-696HF)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN204	1-569-336-11	CONNECTOR, BOARD TO BOARD 7P	
CN260	1-506-482-11	CONNECTOR 3P, MALE	(SLV-696HF)
CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P	
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
* CN803	1-564-031-00	PIN, CONNECTOR 6P	

Ref.No.	Part No.	Description	Remark
		< DIODE >	
D801	8-719-911-19	DIODE 1SS119	
D802	8-719-911-19	DIODE 1SS119	
D803	8-719-911-19	DIODE 1SS119	
D804	8-719-911-19	DIODE 1SS119	
D805	8-719-911-19	DIODE 1SS119	
D806	8-719-400-18	DIODE MA152WK	
D807	8-719-911-19	DIODE 1SS119	
		< IC >	
IC260	8-759-055-49	IC AN3327K	
IC801	8-759-046-75	IC HA118162NT	
		< JUMPER RESISTOR >	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	(SLV-696HF)
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR403	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR404	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR405	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR406	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR833	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L260	1-410-521-11	INDUCTOR 100uH	
L265	1-408-426-00	INDUCTOR 270uH	(SLV-696HF)
L801	1-410-525-11	INDUCTOR 220uH	
L802	1-410-525-11	INDUCTOR 220uH	
L803	1-410-521-11	INDUCTOR 100uH	
L804	1-410-521-11	INDUCTOR 100uH	
L806	1-410-516-11	INDUCTOR 39uH	
L807	1-410-518-21	INDUCTOR 56uH	
L809	1-410-512-11	INDUCTOR 18uH	
L810	1-410-524-41	INDUCTOR 180uH	
L811	1-410-521-11	INDUCTOR 100uH	
L812	1-410-521-11	INDUCTOR 100uH	
L813	1-410-510-11	INDUCTOR 12uH	(SLV-696HF)
L814	1-410-510-11	INDUCTOR 12uH	(SLV-696HF)
L890	1-410-507-11	INDUCTOR 6.8uH	(SLV-696HF)
L891	1-410-521-11	INDUCTOR 100uH	(SLV-696HF)
		< TRANSISTOR >	
⚠Q260	8-729-103-72	TRANSISTOR 2SD1005-BV	(SLV-696HF)
Q801	8-729-422-28	TRANSISTOR 2SD601A-R	
Q802	8-729-422-28	TRANSISTOR 2SD601A-R	
Q803	8-729-424-18	TRANSISTOR UN2113	
Q804	8-729-422-28	TRANSISTOR 2SD601A-R	
Q805	8-729-422-37	TRANSISTOR 2SB709A-R	

Ref.No.	Part No.	Description	Remark
Q806	8-729-422-37	TRANSISTOR 2SB709A-R	
Q807	8-729-422-28	TRANSISTOR 2SD601A-R	
Q808	8-729-421-19	TRANSISTOR UN2213	
Q809	8-729-422-28	TRANSISTOR 2SD601A-R	
Q810	8-729-421-19	TRANSISTOR UN2213	
Q811	8-729-301-98	TRANSISTOR 2SB1000A-L	
Q814	8-729-421-19	TRANSISTOR UN2213	
Q890	8-729-216-22	TRANSISTOR 2SA1162-G	(SLV-696HF)
Q891	8-729-216-22	TRANSISTOR 2SA1162-G	(SLV-696HF)
Q892	8-729-421-19	TRANSISTOR UN2213	(SLV-696HF)
		< RESISTOR >	
R262	1-216-184-00	METAL GLAZE 270 5% 1/8W	
R263	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R265	1-216-033-00	METAL CHIP 220 5% 1/10W	
R266	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R267	1-216-035-00	METAL CHIP 270 5% 1/10W	
R271	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R272	1-216-073-00	METAL CHIP 10K 5% 1/10W	(SLV-696HF)
⚠R273	1-249-387-11	CARBON 3.3 5% 1/4W	(SLV-696HF)
R801	1-216-025-00	METAL CHIP 100 5% 1/10W	
R802	1-216-043-00	METAL CHIP 560 5% 1/10W	
R803	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R804	1-216-023-00	METAL CHIP 82 5% 1/10W	
R805	1-216-613-11	METAL CHIP 27 0.5% 1/10W	
R806	1-216-025-00	METAL CHIP 100 5% 1/10W	
R807	1-216-025-00	METAL CHIP 100 5% 1/10W	
R808	1-216-613-11	METAL CHIP 27 0.5% 1/10W	
R809	1-216-023-00	METAL CHIP 82 5% 1/10W	
R810	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R811	1-216-043-00	METAL CHIP 560 5% 1/10W	
R812	1-216-025-00	METAL CHIP 100 5% 1/10W	
R813	1-216-047-00	METAL CHIP 820 5% 1/10W	
R815	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R816	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R817	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R818	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R819	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R820	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R821	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R822	1-216-039-00	METAL CHIP 390 5% 1/10W	
R823	1-216-047-00	METAL CHIP 820 5% 1/10W	
R824	1-216-039-00	METAL CHIP 390 5% 1/10W	
R825	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R826	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R827	1-216-045-00	METAL CHIP 680 5% 1/10W	
R828	1-216-043-00	METAL CHIP 560 5% 1/10W	
R830	1-216-043-00	METAL CHIP 560 5% 1/10W	
R831	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description	Remark
R832	1-216-047-00	METAL CHIP 820 5%	1/10W
R833	1-216-049-00	METAL CHIP 1K 5%	1/10W
R834	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R835	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R836	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R838	1-216-043-00	METAL CHIP 560 5%	1/10W
R839	1-216-089-00	METAL CHIP 47K 5%	1/10W
R891	1-216-011-00	METAL CHIP 27 5% 1/10W	(SLV-696HF)
R894	1-216-041-00	METAL CHIP 470 5% 1/10W	(SLV-696HF)
R895	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(SLV-696HF)
R896	1-216-095-00	METAL CHIP 82K 5% 1/10W	(SLV-696HF)
R897	1-216-089-00	METAL CHIP 47K 5% 1/10W	(SLV-696HF)
R898	1-216-748-11	METAL CHIP 39K 1% 1/10W	(SLV-696HF)

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T260	1-406-349-11	TRANSFORMER, OSCILLATION	(SLV-696HF)

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1-413-686-11 SR-370 BOARD (POWER BLOCK)
************ (Ref.No 4,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
⚠C101	9-900-521-01	FILM 0,1uF	125V
⚠C102	9-900-521-01	FILM 0,1uF	125V
⚠C103	9-900-522-01	CERAMIC 2200PF	125V
⚠C104	9-900-522-01	CERAMIC 2200PF	125V
⚠C105	9-900-522-01	CERAMIC 2200PF	125V
⚠C106	9-902-054-01	ELECT 470uF	200V
C107	1-124-927-11	ELECT 4,7uF 20%	50V
C108	9-902-055-01	CERAMIC 100PF	1KV
C109	9-900-525-01	FILM 0,047uF	400V
C110	1-130-491-00	MYLAR 0,047uF 5%	50V
C111	1-130-491-00	MYLAR 0,047uF 5%	50V
C201	1-124-443-00	ELECT 100uF 20%	10V
C202	1-124-122-11	ELECT 100uF 20%	50V
C203	9-900-540-01	ELECT 2200uF	16V
C204	1-126-101-11	ELECT 100uF 20%	16V
C205	1-126-101-11	ELECT 100uF 20%	16V
C206	9-900-541-01	ELECT 2200uF	10V
C207	9-902-067-01	ELECT 1uF	50V
C208	9-900-542-01	ELECT 470uF	10V
C209	1-130-483-00	MYLAR 0,01uF 5%	50V
C210	1-124-443-00	ELECT 100uF 20%	10V
C211	1-124-122-11	ELECT 100uF 20%	50V
C212	1-124-471-00	ELECT 1000uF 20%	6.3V
C213	1-130-483-00	MYLAR 0,01uF 5%	50V
C214	1-130-483-00	MYLAR 0,01uF 5%	50V
C215	9-902-197-01	CERAMIC 1000pF	1KV
C216	1-124-443-00	ELECT 100uF 20%	10V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	9-902-075-01	CONNECTOR 13P	
CN102	9-902-076-01	CONNECTOR 7P	
⚠CNJ101	9-902-079-01	INLET AC (AC IN)	

< DIODE >

Ref. No.	Part No.	Description	Remark
⚠D101	8-719-510-06	DIODE S1WB60	
⚠D102	9-900-512-01	DIODE AG01A	
⚠D103	8-719-200-82	DIODE 11ES2	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-911-19	DIODE 1SS119	
D106	8-719-911-19	DIODE 1SS119	
D107	8-719-911-19	DIODE 1SS119	
D108	8-719-911-19	DIODE 1SS119	
D109	8-719-911-19	DIODE 1SS119	
⚠D110	9-902-050-01	DIODE ERA15-06	
⚠D201	9-900-534-01	DIODE ERA18-02	
⚠D202	8-719-114-87	DIODE RD18JSB2	
⚠D204	8-719-230-02	DIODE 30DF2	
⚠D205	8-719-981-00	DIODE ERC81-004	
⚠D206	9-900-534-01	DIODE ERA18-02	
⚠D207	8-719-981-01	DIODE ERA81-004	

< FUSE >

Ref. No.	Part No.	Description	Remark
⚠F101	1-532-743-11	FUSE, GLASS TUBE 2A 125V	

< BEAD CORE >

Ref. No.	Part No.	Description	Remark
FB101	9-902-053-01	CORE, BEAD	

< IC >

Ref. No.	Part No.	Description	Remark
⚠IC201	9-902-065-01	IC PQ12RF13	
⚠IC202	9-902-066-01	IC PQ12RF11	
IC203	9-900-533-01	IC HA17431	
IC204	9-900-533-01	IC HA17431	

< COIL >

Ref. No.	Part No.	Description	Remark
⚠L101	9-900-520-01	FILTER, LINE ELF18D290A	
L201	9-900-539-01	COIL, CHOKE 10uH	

< PHOTO COUPLER >

Ref. No.	Part No.	Description	Remark
⚠PC101	8-719-902-56	PHOTO COUPLER PC817	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
⚠Q101	8-729-204-94	TRANSISTOR 2SC3559	
⚠Q102	9-900-517-01	TRANSISTOR 2SC3377	
Q201	8-729-903-32	TRANSISTOR 2SA933-Q	
⚠Q202	8-729-140-98	TRANSISTOR 2SD773-34	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifé.

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
⚠R101	9-902-056-01	SOLID	6.8M		1/2W
R102	1-249-441-11	CARBON	100K	5%	1/4W
R103	1-249-441-11	CARBON	100K	5%	1/4W
R104	1-249-429-11	CARBON	10K	5%	1/4W
⚠R106	9-902-057-01	METAL	47K		3W
⚠R107	9-902-058-01	METAL	100		1W
R108	1-249-413-11	ADJ	470	5%	1/4W
R109		ADJ			
R110	1-249-497-11	CARBON	22	5%	1/4W
R201	1-249-417-11	CARBON	1K	5%	1/4W
⚠R202	1-247-727-11	CARBON	10	5%	1/2W F
R203	1-249-417-11	CARBON	1K	5%	1/4W
R204	9-902-069-01	CARBON	47		1/2W
R205	1-215-428-00	CARBON	2K	1%	1/4W
R206	1-215-425-00	CARBON	1,5K	1%	1/4W
R207	9-902-070-01	ADJ	56K		1/4W
⚠R208	9-900-543-01	METAL	0,22		1/2W
R209	9-902-071-01	CARBON	100		1/4W
R210	9-902-071-01	CARBON	100		1/4W
R211	1-249-417-11	CARBON	1K	5%	1/4W
R212	1-215-425-00	METAL	1,5K	1%	1/4W
R213	9-902-072-01	ADJ	100		1/4W
R214	1-215-425-00	METAL	1,5K	1%	1/4W
⚠R215	9-902-073-01	FUSE	10		1/4W F
⚠R216	9-902-074-01	CARBON	0,47		1/4W
R217	1-249-429-11	CARBON	10K	5%	1/4W
		< TYRISTOR >			
⚠SCR201	8-719-107-87	TYRISTOR 03P2M			
		< TRANSFORMER >			
⚠T101	9-902-052-01	TRANSFORMER, SWITCHING ETS28K356V			
**					
*	A-6754-426-A	TU-132 BOARD, COMPLETE **********************			
					(Ref. No 4,000 Series)
	3-710-578-01	COVER, VOLUME, 6 MOLD			
		< CAPACITOR >			
C001	1-124-126-00	ELECT	47uF	20%	10V
C002	1-124-927-11	ELECT	4.7uF	20%	100V
C003	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C004	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C005	1-126-101-11	ELECT	100uF	20%	16V
C007	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C008	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C011	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C012	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C014	1-124-126-00	ELECT	47uF	20%	10V
C016	1-124-126-00	ELECT	47uF	20%	10V
C019	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C020	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C021	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C023	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C025	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C026	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C027	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C028	1-163-091-00	CERAMIC CHIP	8PF		50V
C029	1-124-443-00	ELECT	100uF	20%	10V
C030	1-124-907-11	ELECT	10uF	20%	50V
C031	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C032	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C033	1-124-126-00	ELECT	47uF	20%	10V
C034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C035	1-124-250-00	ELECT	0.15uF	20%	50V
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C037	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C038	1-124-903-11	ELECT	1uF	20%	50V
C039	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C040	1-124-126-00	ELECT	47uF	20%	10V
C041	1-124-902-00	ELECT	0.47uF	20%	50V
C043	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C044	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C045	1-124-907-11	ELECT	10uF	20%	50V
C046	1-124-126-00	ELECT	47uF	20%	10V
C070	1-130-484-00	MYLAR	0.012uF	5%	50V
C071	1-130-480-00	MYLAR	0.0056uF	5%	50V
C072	1-124-252-00	ELECT	0.33uF	20%	50V
C073	1-124-907-11	ELECT	10uF	20%	50V
C074	1-124-907-11	ELECT	10uF	20%	50V
C075	1-130-476-00	MYLAR	0.0027uF	5%	50V
C076	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C077	1-124-907-11	ELECT	10uF	20%	50V
C078	1-131-365-00	TANTALUM	10uF	10%	20V
C079	1-124-903-11	ELECT	1uF	20%	50V
C080	1-131-368-00	TANTALUM	3.3uF	10%	16V
C081	1-124-907-11	ELECT	10uF	20%	50V
C082	1-124-907-11	ELECT	10uF	20%	50V
C083	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C084	1-124-927-11	ELECT	4.7uF	20%	100V
C085	1-124-902-00	ELECT	0.47uF	20%	50V
C086	1-124-903-11	ELECT	1uF	20%	50V
C087	1-126-157-11	ELECT	10uF	20%	16V
C088	1-164-232-11	CERAMIC CHIP	0.01uF		50V

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TU-132

Ref. No.	Part No.	Description			Remark
C089	1-126-162-11	ELECT	3.3uF	20%	50V
C090	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C091	1-124-907-11	ELECT	10uF	20%	50V
C092	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C098	1-126-233-11	ELECT	22uF	20%	50V
		< FILTER >			
CF001	1-577-559-11	FILTER, CERAMIC			
CF002	1-409-332-00	CERAMIC TRAP			
CF003	1-527-943-00	FILTER, CERAMIC			
		< CONNECTOR >			
CN001	1-573-826-11	CONNECTOR, BOARD TO BOARD 12P			
CN002	1-573-826-11	CONNECTOR, BOARD TO BOARD 12P			
		< DIODE >			
⚠D001	8-719-929-71	DIODE	HZS33NB1		
D005	8-719-104-34	DIODE	1S2836		
D006	8-719-104-34	DIODE	1S2836		
⚠D007	8-719-800-76	DIODE	1SS226		
		< IC >			
IC001	8-759-630-93	IC	M51362SP		
IC002	8-752-035-71	IC	CXA1124A		
IC003	8-759-981-64	IC	LM2903DQ		
		< JUMPER RESISTOR >			
JP002	1-216-296-00	METAL CHIP	0	5%	1/8W
JP004	1-216-295-00	METAL CHIP	0	5%	1/10W
JP006	1-216-296-00	METAL CHIP	0	5%	1/8W
JP007	1-216-296-00	METAL CHIP	0	5%	1/8W
JP008	1-216-295-00	METAL CHIP	0	5%	1/10W
JP009	1-216-296-00	METAL CHIP	0	5%	1/8W
JP010	1-216-296-00	METAL CHIP	0	5%	1/8W
JP011	1-216-296-00	METAL CHIP	0	5%	1/8W
JP012	1-216-296-00	METAL CHIP	0	5%	1/8W
JP013	1-216-295-00	METAL CHIP	0	5%	1/10W
JP014	1-216-296-00	METAL CHIP	0	5%	1/8W
JP015	1-216-296-00	METAL CHIP	0	5%	1/8W
JP016	1-216-295-00	METAL CHIP	0	5%	1/10W
JP017	1-216-295-00	METAL CHIP	0	5%	1/10W
JP018	1-216-296-00	METAL CHIP	0	5%	1/8W
JP019	1-216-296-00	METAL CHIP	0	5%	1/8W
JP020	1-216-296-00	METAL CHIP	0	5%	1/8W
JP021	1-216-295-00	METAL CHIP	0	5%	1/10W
JP022	1-216-295-00	METAL CHIP	0	5%	1/10W
JP023	1-216-296-00	METAL CHIP	0	5%	1/8W
JP024	1-216-295-00	METAL CHIP	0	5%	1/10W
JP025	1-216-296-00	METAL CHIP	0	5%	1/8W

Ref. No.	Part No.	Description			Remark
JP026	1-216-296-00	METAL CHIP	0	5%	1/8W
JP027	1-216-295-00	METAL CHIP	0	5%	1/10W
JP028	1-216-296-00	METAL CHIP	0	5%	1/8W
JP029	1-216-296-00	METAL CHIP	0	5%	1/8W
JP030	1-216-296-00	METAL CHIP	0	5%	1/8W
JP031	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L001	1-408-409-00	INDUCTOR	10uH		
L002	1-410-977-11	INDUCTOR	100uH		
L003	1-408-413-00	INDUCTOR	22uH		
L004	1-408-409-00	INDUCTOR	10uH		
L005	1-410-971-11	INDUCTOR	10uH		
L006	1-410-787-31	INDUCTOR	0.33uH		
L007	1-410-316-11	INDUCTOR	1uH		
L008	1-410-972-11	INDUCTOR	15uH		
L010	1-410-971-11	INDUCTOR	10uH		
L011	1-410-971-11	INDUCTOR	10uH		
L098	1-412-292-11	INDUCTOR	1.2uH		
		< TRANSISTOR >			
⚠Q001	8-729-173-38	TRANSISTOR	2SA733-K		
Q002	8-729-421-19	TRANSISTOR	UN2213		
Q005	8-729-822-90	TRANSISTOR	2SC3779C		
Q006	8-729-822-90	TRANSISTOR	2SC3779C		
Q007	8-729-422-27	TRANSISTOR	2SD601A-QRS		
Q008	8-729-422-27	TRANSISTOR	2SD601A-QRS		
Q009	8-729-422-27	TRANSISTOR	2SD601A-QRS		
Q070	8-729-422-27	TRANSISTOR	2SD601A-QRS		
Q071	8-729-421-19	TRANSISTOR	UN2213		
		< RESISTOR >			
R001	1-216-085-00	METAL CHIP	33K	5%	1/10W
R002	1-216-089-00	METAL CHIP	47K	5%	1/10W
R003	1-216-037-00	METAL CHIP	330	5%	1/10W
R004	1-216-035-00	METAL CHIP	270	5%	1/10W
R005	1-216-025-00	METAL CHIP	100	5%	1/10W
R006	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R008	1-216-049-00	METAL CHIP	1K	5%	1/10W
R009	1-216-049-00	METAL CHIP	1K	5%	1/10W
R010	1-216-033-00	METAL CHIP	220	5%	1/10W
R012	1-216-081-00	METAL CHIP	22K	5%	1/10W
R013	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R014	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R015	1-216-081-00	METAL CHIP	22K	5%	1/10W
R016	1-216-081-00	METAL CHIP	22K	5%	1/10W
R018	1-216-083-00	METAL CHIP	27K	5%	1/10W
R019	1-216-089-00	METAL CHIP	47K	5%	1/10W

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Ref. No.	Part No.	Description				Remark
R020	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R023	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R025	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R029	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R030	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R031	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R032	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R033	1-216-017-00	METAL CHIP	47	5%	1/10W	
R034	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R035	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R036	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R038	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R039	1-216-043-00	METAL CHIP	560	5%	1/10W	
R040	1-216-025-00	METAL CHIP	100	5%	1/10W	
R041	1-216-037-00	METAL CHIP	330	5%	1/10W	
R042	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R043	1-216-037-00	METAL CHIP	330	5%	1/10W	
R044	1-216-037-00	METAL CHIP	330	5%	1/10W	
R046	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R047	1-216-037-00	METAL CHIP	330	5%	1/10W	
R048	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R049	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R050	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R051	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R053	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R054	1-216-029-00	METAL CHIP	150	5%	1/10W	
R055	1-216-039-00	METAL CHIP	390	5%	1/10W	
R056	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R057	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R058	1-216-037-00	METAL CHIP	330	5%	1/10W	
R059	1-216-037-00	METAL CHIP	330	5%	1/10W	
R060	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R061	1-216-047-00	METAL CHIP	820	5%	1/10W	
R062	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R063	1-216-021-00	METAL CHIP	68	5%	1/10W	
R064	1-216-025-00	METAL CHIP	100	5%	1/10W	
R065	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R070	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R071	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R072	1-216-690-11	METAL CHIP	43K	0.5%	1/10W	
R073	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R074	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R075	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R076	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R077	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R078	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R079	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R080	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R081	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R082	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R083	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R084	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R085	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R086	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R087	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R089	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R098	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R099	1-216-079-00	METAL CHIP	18K	5%	1/10W	

< VARIABLE RESISTOR >

RV001	1-241-630-11	RES, ADJ, CARBON 10K
RV002	1-241-079-11	RES, ADJ, CARBON 4.7K
RV070	1-228-993-00	RES, ADJ, METAL 4.7K
RV071	1-228-995-00	RES, ADJ, METAL 22K
RV072	1-228-996-00	RES, ADJ, METAL 47K
RV073	1-241-630-11	RES, ADJ, CARBON 10K

< SWITCH >

SWF001	1-404-971-11	FILTER, SURFACE WAVE

< COIL >

T001	1-404-749-11	COIL
T002	1-404-802-11	COIL
T003	1-404-752-11	COIL
T004	1-404-744-11	COIL, IF

< TUNER >

TU001	1-465-239-21	TUNER, ET

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* A-6754-388-A YC-114 BOARD, COMPLETE

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(Ref. No 1,000 Series)

< CAPACITOR >

C002	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C003	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C004	1-124-126-00	ELECT	47uF	20%	10V
C007	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C008	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C010	1-124-126-00	ELECT	47uF	20%	10V
C011	1-124-907-11	ELECT	10uF	20%	50V
C012	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C013	1-124-903-11	ELECT	1uF	20%	50V
C014	1-124-903-11	ELECT	1uF	20%	50V
C016	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C017	1-124-126-00	ELECT	47uF	20%	10V

YC-114

Ref. No.	Part No.	Description			Remark
C018	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C019	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C020	1-124-907-11	ELECT	10uF	20%	50V
C021	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C023	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-124-907-11	ELECT	10uF	20%	50V
C025	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C027	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C031	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C032	1-124-903-11	ELECT	1uF	20%	50V
C033	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C035	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C037	1-124-907-11	ELECT	10uF	20%	50V
C038	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C039	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C040	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C041	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C042	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C043	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C044	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C045	1-163-088-00	CERAMIC CHIP	5PF		50V
C046	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C047	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C048	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C049	1-124-907-11	ELECT	10uF	20%	50V
C050	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C052	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C053	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C055	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C056	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C057	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C058	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C059	1-124-903-11	ELECT	1uF	20%	50V
C061	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C062	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C066	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C069	1-124-902-00	ELECT	0.47uF	20%	50V
C070	1-124-927-11	ELECT	4.7uF	20%	100V
C071	1-124-126-00	ELECT	47uF	20%	10V
C072	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C073	1-124-903-11	ELECT	1uF	20%	50V
C074	1-163-090-00	CERAMIC CHIP	7PF		50V
C075	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C076	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C080	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C081	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C085	1-162-637-11	CERAMIC CHIP	0.47uF		16V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN001	1-573-826-11	CONNECTOR, BOARD TO BOARD 12P			
CN002	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P			
		< DIODE >			
D001	8-719-911-19	DIODE	1SS119		
D004	8-719-911-19	DIODE	1SS119		
D005	8-719-911-19	DIODE	1SS119		
D007	8-719-911-19	DIODE	1SS119		
D009	8-719-911-19	DIODE	1SS119		
D010	8-719-911-19	DIODE	1SS119		
		< DELAY LINE >			
DL001	1-415-668-31	DELAY LINE, ULTRASONIC			
		< IC >			
IC001	8-759-046-76	IC	LA7396		
IC002	8-759-821-50	IC	LC8991		
		< JUMPER RESISTOR >			
JR001	1-216-296-00	METAL CHIP	0	5%	1/8W
JR501	1-216-296-00	METAL CHIP	0	5%	1/8W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-295-00	METAL CHIP	0	5%	1/10W
JR504	1-216-295-00	METAL CHIP	0	5%	1/10W
JR505	1-216-296-00	METAL CHIP	0	5%	1/8W
JR506	1-216-295-00	METAL CHIP	0	5%	1/10W
JR507	1-216-296-00	METAL CHIP	0	5%	1/8W
JR508	1-216-296-00	METAL CHIP	0	5%	1/8W
JR509	1-216-296-00	METAL CHIP	0	5%	1/8W
JR510	1-216-296-00	METAL CHIP	0	5%	1/8W
JR511	1-216-295-00	METAL CHIP	0	5%	1/10W
JR512	1-216-295-00	METAL CHIP	0	5%	1/10W
JR513	1-216-296-00	METAL CHIP	0	5%	1/8W
JR514	1-216-295-00	METAL CHIP	0	5%	1/10W
JR515	1-216-295-00	METAL CHIP	0	5%	1/10W
JR516	1-216-296-00	METAL CHIP	0	5%	1/8W
JR518	1-216-296-00	METAL CHIP	0	5%	1/8W
JR560	1-216-295-00	METAL CHIP	0	5%	1/10W
JR561	1-216-295-00	METAL CHIP	0	5%	1/10W
JR562	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L002	1-410-524-41	INDUCTOR	180uH		
L003	1-410-521-11	INDUCTOR	100uH		
L004	1-408-421-00	INDUCTOR	100uH		
L005	1-410-501-11	INDUCTOR	2.2uH		

Ref. No.	Part No.	Description	Remark
L006	1-412-316-11	INDUCTOR 120uH	
L007	1-408-427-00	INDUCTOR 330uH	
L008	1-408-416-00	INDUCTOR 39uH	
L009	1-408-429-00	INDUCTOR 470uH	
L010	1-408-421-00	INDUCTOR 100uH	
L011	1-410-977-11	INDUCTOR 100uH	
L013	1-408-418-00	INDUCTOR 56uH	
L020	1-408-412-00	INDUCTOR 18uH	
L021	1-408-416-00	INDUCTOR 39uH	
		< TRANSISTOR >	
Q001	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q005	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q006	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q007	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q008	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q010	8-729-421-19	TRANSISTOR UN2213	
Q011	8-729-424-56	TRANSISTOR UN211L	
Q014	8-729-424-46	TRANSISTOR UN211E	
Q015	8-729-421-19	TRANSISTOR UN2213	
Q016	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q018	8-729-421-19	TRANSISTOR UN2213	
Q020	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q022	8-729-421-19	TRANSISTOR UN2213	
Q023	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R001	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R004	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R005	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R006	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R007	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R008	1-216-041-00	METAL CHIP 470 5% 1/10W	
R009	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R010	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R013	1-216-039-00	METAL CHIP 390 5% 1/10W	
R014	1-216-043-00	METAL CHIP 560 5% 1/10W	
R015	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R016	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R017	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R018	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R019	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R020	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R021	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R022	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R023	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R025	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R027	1-216-052-00	METAL CHIP 1.3K 5% 1/10W	
R028	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R029	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R030	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R031	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R032	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R033	1-216-045-00	METAL CHIP 680 5% 1/10W	
R034	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R035	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R036	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R037	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R038	1-216-036-00	METAL CHIP 300 5% 1/10W	
R039	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R040	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R041	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R042	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R044	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R046	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R047	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R048	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R054	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R055	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R056	1-216-204-00	METAL GLAZE 1.8K 5% 1/8W	
R057	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R058	1-216-025-00	METAL CHIP 100 5% 1/10W	
R060	1-216-037-00	METAL CHIP 330 5% 1/10W	
R061	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R062	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV001	1-241-630-11	RES, ADJ, CARBON 10K	
RV002	1-241-630-11	RES, ADJ, CARBON 10K	
RV003	1-241-630-11	RES, ADJ, CARBON 10K	
RV004	1-241-630-11	RES, ADJ, CARBON 10K	
RV005	1-241-628-11	RES, ADJ, CARBON 2.2K	
		< CRYSTAL >	
X001	1-577-380-11	VIBRATOR, CRYSTAL (3.58MHz)	

****

Ref.No.	Part No.	Description	Remark
		MISCELLANEOUS	
		*************	
1	1-466-627-21	SWITCH BLOCK, CONTROL	(SLV-595HF)
1	1-466-627-31	SWITCH BLOCK, CONTROL	(SLV-696HF)
54	1-572-662-11	SWITCH, ROTARY	
⚠ 62	1-413-686-11	POWER BLOCK (SR-370 BOARD)	
110	1-690-347-11	WIRE, FLAT TYPE (22 CORE)	
113	1-555-110-00	CABLE, PIN	
161	1-506-482-11	CONNECTOR 3P, MALE	
260	1-543-647-11	HEAD, FE	
264	8-848-581-01	DRUM ASSY, ROTARY UPPER (DZR-49-R)	(SLV-696HF)
264	8-848-583-01	DRUM ASSY, ROTARY UPPER (DZR-50-R)	(SLV-595HF)
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
M901	8-848-580-11	DRUM ASSY (DZH-49A-R)	(SLV-696HF)
M901	8-848-582-11	DRUM ASSY (DZH-50A-R)	(SLV-595HF)
M902	8-835-469-01	MOTOR, DC U-26J (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	
S1	1-692-062-21	SWITCH, ROTARY	

****

Ref.No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		******************************	
⚠	1-590-135-31	CORD, POWER	
	3-753-884-21	MANUAL, INSTRUCTION (ENGLISH)	
	3-753-884-31	MANUAL, INSTRUCTION (FRENCH)	(Canadian)
*	3-795-581-21	SAFEGUARD (SONY), IMPORTANT (US)	
	1-417-139-11	MATCHING TRANSFORMER, ANTENNA	
	1-465-915-11	REMOTE COMMANDER (RMT-V102D)	(SLV-595HF)
	1-465-916-11	REMOTE COMMANDER (RMT-V112A)	(SLV-696HF)
	1-558-076-41	CORD, CONNECTION (RF)	
	1-575-334-11	CORD, CONNECTION (AUDIO/VIDEO 3P-3P)	
*	3-944-619-01	INDIVIDUAL CARTON	(SLV-595HF)
*	3-944-619-11	INDIVIDUAL CARTON	(SLV-696HF)
*	3-944-620-01	CUSHION (UPPER)	
*	3-944-621-01	CUSHION (LOWER)	

****

HARDWARE LIST

Ref.No.	Part No.	Description	Remark
#1	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#3	7-621-255-25	SCREW +PTT 2X4 (S)	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#5	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#6	7-682-645-01	SCREW +PS 3X4	
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#8	7-682-547-04	SCREW +P 3X6	
#9	7-682-546-04	SCREW +P 3X5	
#10	7-682-548-04	SCREW +P 3X8	
#11	7-621-732-08	SET-SCT, HEX. 2X3 FLAT POINT	
#12	7-628-254-00	SCREW +PS 2.6X5	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

SECTION 7
ELECTRICAL ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 182.

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

〔Instruments to be Used〕

1) Color TV
2) Single or dual trace type oscilloscope, band more than 30 MHz, delay mode, as provided.
3) Frequency counter (4 digits or more)
4) NTSC pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion factor gauge
10) Audio multiple signal generator
11) Alignment tape
    Part code: H7099046H (MH-1)
12) Hi-Fi alignment tape
    Part code: H7099153H (Hi-Fi 400 Hz)

〔Connection〕

Unless otherwise specified, connect and adjust the measurement equipment as follows.

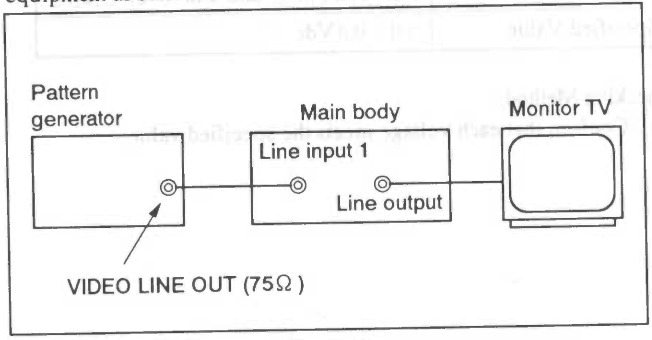


Fig. 7-1.

〔Set-up for Adjustment〕

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscope to the video input terminal on the MA-106 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red signal" are 0.30 : 0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the electrical adjustment.

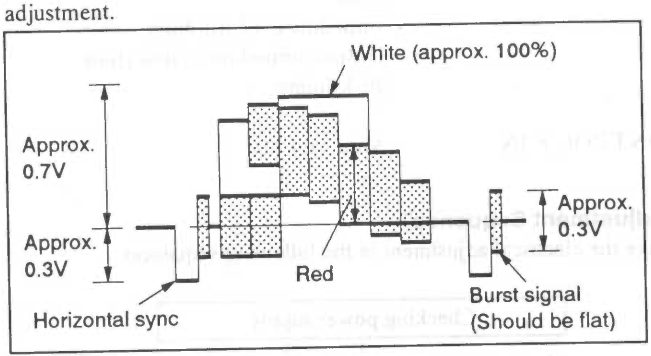


Fig. 7-2. Color bar signal of pattern generator

〔Alignment Tape (MH-1)〕

	Mode	Time	video signal	Audio signal
1	SP	Ten minutes	Stair-step	7 kHz
2		Five minutes	—	3 kHz
3		Ten minutes	Color bar	1 kHz
4		Three minutes	RF sweep	

〔Hi-Fi Alignment Tape〕

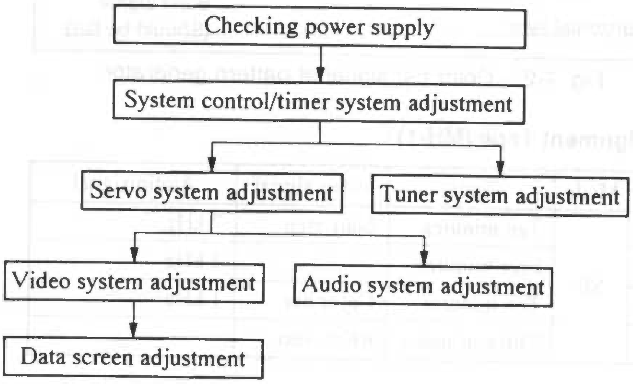
	Mode	Time	video signal	Audio signal
1	SP	Six minutes	Monaural scope	Normal: no signal HIFI: 400 Hz

〔Specified Input/Output Level Impedance〕
Input/output terminal

LINE IN 1 and 2	VIDEO IN (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (2 each) Input level: −7.5 dBs (0 dBs=0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT	VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2) standard output: −7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms
CONTROL S IN	Mini jack (1)

〔Adjustment Sequence〕

Make the electrical adjustment in the following sequences.


Checking power supply
System control/timer system adjustment
Servo system adjustment
Tuner system adjustment
Video system adjustment
Audio system adjustment
Data screen adjustment

7-1. POWER SUPPLY CHECK (SR-370 BOARD)

Mode	E-E
Measurement Equipment	Digital voltmeter
UNSW 6V check	
Measurement Point	Pin ④ of CN101
Specified Value	5.9±0.25 Vdc
MTR 12V check	
Measurement Point	Pin ⑫ of CN101
Specified Value	12.3 ± 0.3 Vdc
SW 12V check	
Measurement Point	Pin ① of CN101
Specified Value	12.0±0.3 Vdc
SW 5V check	
Measurement Point	Pin ③ of CN101
Specified Value	5.1±0.2Vdc
+35V check	
Measurement Point	Pin ⑧ of CN101
Specified Value	35.0±0.3Vdc
−30V check	
Measurement Point	Pin ⑤ of CN102
Specified Value	−28.5±2.5Vdc
DC 3.2V check	
Measurement Point	Between Pin ⑥ and Pin ⑦ of CN102
Specified Value	3.0±0.3 Vdc

Checking Method:

1) Confirm that each voltage meets the specified value.

7-2. SYSTEM CONTROL/TIMER SYSTEM ADJUSTMENT

1. Clock adjustment (MF-140 board)

Measurement Point	Pin ⑥⓪ of IC901
Measurement Equipment	Frequency counter (Interval counter mode)
Adjustment Element	CT901
Specified Value	0.1249995 ± 0.0000005 sec

Note: Do not adjust CT901 except when replacing IC901.

Adjustment Method:

1) Connect IC901 ⑥③ to ground. (This puts the set into adjustment mode)
2) Connect the frequency counter as shown below.
3) Set oscillation frequency to the specified value using CT901.

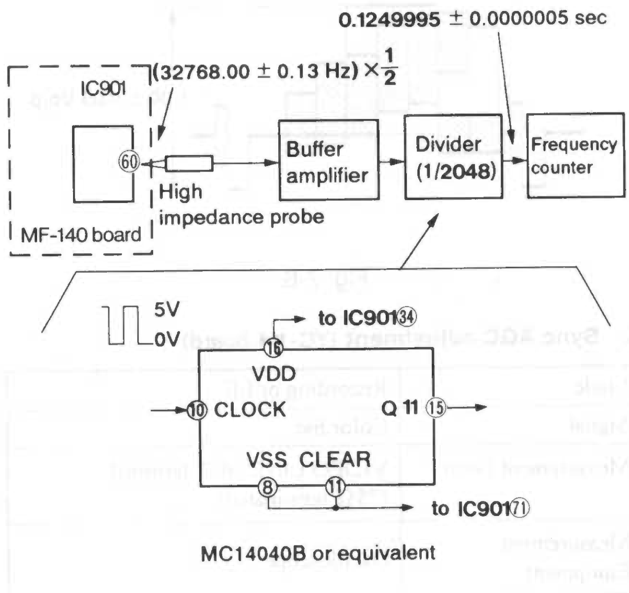

0.1249995 ± 0.0000005 sec
(32768.00 ± 0.13 Hz) × 1/2
IC901
⑥⓪
High impedance probe
MF-140 board
Buffer amplifier
Divider (1/2048)
Frequency counter
5V
0V
to IC901㉞
⑯
VDD
⑩ CLOCK
Q 11 ⑮
VSS CLEAR
⑧
⑪
to IC901(71)
MC14040B or equivalent

Fig. 7-3.

7-3. SERVO SYSTEM ADJUSTMENT

1. V switching position adjustment (MA-106 board)

Mode	Playback
Signal	Alignment tape, Stair step
Measurement Point	CH1: VIDEO LINE OUT terminal CH2: Pin ⑪ of CN005 (RF SWP)
Measurement Equipment	Oscilloscope
Adjustment Element	RV501
Specified Value	413 ± 32 μsec (6.5 ± 0.5H)

Adjustment Method:

1) Press the tracking buttons ▼ and ▲ at a time.
2) Adjust for 413 ± 32 μsec (6.5 ± 0.5) using RV501.

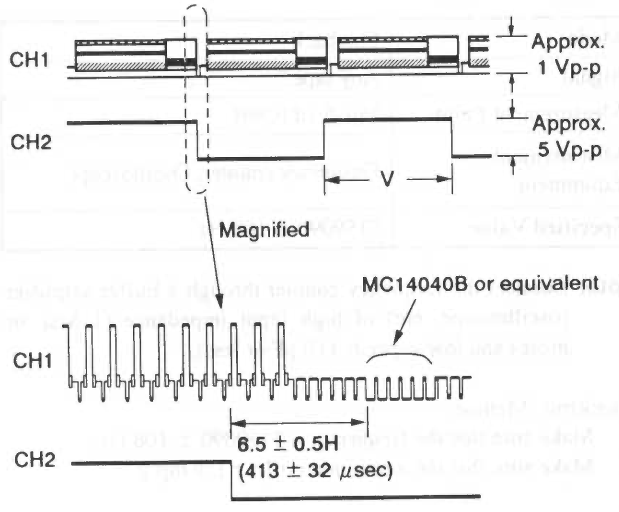

CH1
CH2
Approx. 1 Vp-p
Approx. 5 Vp-p
V
Magnified
MC14040B or equivalent
CH1
CH2
6.5 ± 0.5H
(413 ± 32 μsec)

Fig. 7-4. Switching position adjustment

7-4. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following sequences as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode. Make sure that sync and color burst signals meet requirements specified at set up of adjustment shown in Fig. 7-2.

〔Adjustment Sequences〕

1) Crystal oscillation frequency check
2) Playback Y signal level adjustment
3) Sync AGC adjustment
4) Sync tip carrier set and deviation adjustment
5) Recording chroma signal level adjustment

1. Crystal oscillation frequency check (YC-114 board)

Mode	Playback
Signal	Any tape
Measurement Point	Pin ㉑ of IC001
Measurement Equipment	Frequency counter, Oscilloscope
Specified Value	7159090 ± 108 Hz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc) of high input impedance (1 MΩ or more) and low capacity (10 pF or less).

Checking Method:

1) Make sure that the frequency is 7159090 ± 108 Hz.
2) Make sure that the amplitude is 610 ± 130 mp-p.

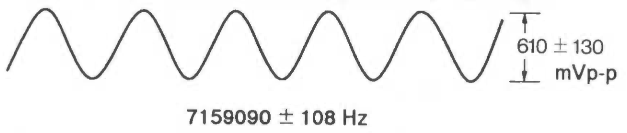


Fig. 7-5.

2. Playback Y signal level adjustment (YC-114 board)

Mode	Playback
Signal	Alignment tape, color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV004
Specified Value	1.00 ± 0.05 Vp-p

Note 1: VIDEO LINE OUT should be terminated at 75Ω .

Note 2: Make this adjustment EDIT OFF condition.

Adjustment Method:

1) Adjust for 1.00 ± 0.05 Vp-p using RV004.

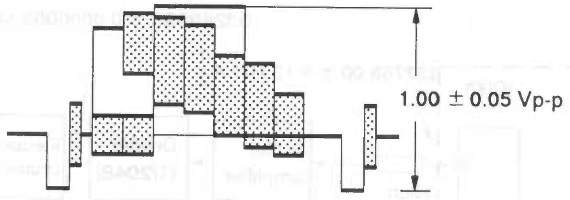


Fig. 7-6.

3. Sync AGC adjustment (YC-114 board)

Mode	Recording or EE
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV002
Specified Value	1.00 ± 0.05 Vp-p

Note: VIDEO LINE OUT should be terminated at 75Ω .

Adjustment Method:

1) Adjust for 1.00 ± 0.05 Vp-p using RV002.

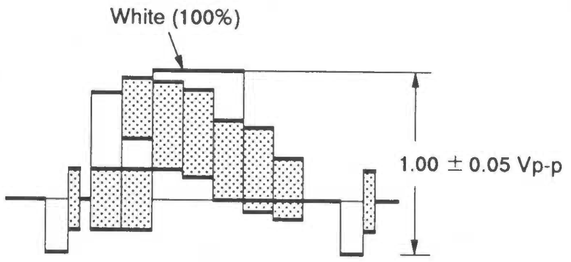


Fig. 7-7.

4. Sync tip carrier set and deviation adjustment (YC-114 board)

Before starting this adjustment, be sure to check that "2. recording Y signal level adjustment" has been completed.

Sync tip carrier set	
Mode	E-E
Signal	No signal
Measurement Point	Pin ⑩ of CN002
Measurement Equipment	Frequency counter
Adjustment Element	RV001
Specified Value	3.45 ± 0.05 MHz
Deviation adjustment	
Mode	Recording and playback
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV003
Specified Value	1.00 ± 0.05 Vp-p

Note 1: Make this adjustment EDIT OFF condition.
Note 2: VIDEO LINE OUT should be terminated at 75Ω .

Adjustment Method:

1) Make no signal state and select the E-E mode.
2) Connect the frequency counter to the Pin ⑩ of CN002 and adjust for 3.45 ± 0.05 MHz using RV001.
3) Input the color bar signal to make recording.
4) Playback the recorded tape portion and check the play back Y signal level of VIDEO LINE OUT terminal (75Ω terminated).
   Specification: Should be 1.00 ± 0.05 Vp-p.
5) If does not meet the specification, repeat 1) to 4) after adjusting RV003.

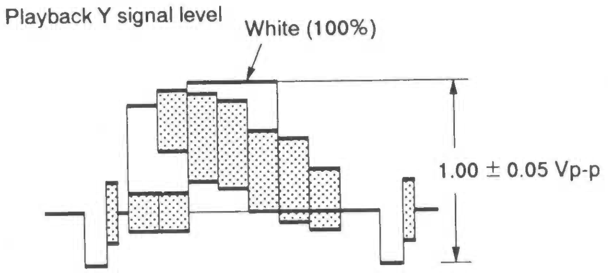


Fig. 7-8.

5. Recording chroma signal level adjustment (YC-114 board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ⑭ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	RV005
Specified Value	200 ± 5 mVp-p

Adjustment Method:

1) Adjust the color bar "red" level to 200 ± 5 mVp-p using RV007.

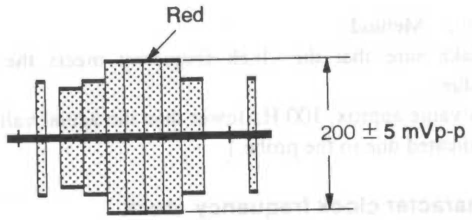


Fig. 7.9

7-5. DATA SCREEN ADJUSTMENT

1. 4 fsc clock check (CG-14 board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ㉘ of IC602 (Note 1)
Measurement Equipment	Frequency counter
Specified Value	14318180 ± 100 Hz

Note 1: Connect a probe of high input impedance (1 MΩ or more) and low capacity (10 pF or less) through 1 kΩ resistor. (1-249-417-11)

Checking Method:

1) Make sure that the clock frequency meets the specified value.
(A value approx. 100 Hz lower than the actual value may be indicated due to the probe.)

2. Character clock frequency check (CG-14 board)

Mode	Playback
Signal	Alignment tape, color bar or stair case
Measurement Point	Pin ⑤ of IC602 (Note 1)
Measurement Equipment	Frequency counter
Specified Value	7.3 ± 0.3 MHz

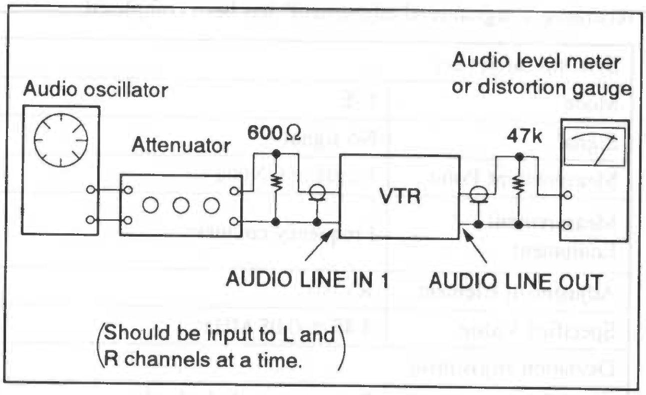
Note 1: Connect a probe of high input impedance (1 MΩ or more) and low capacity (10 pF or less) to the measurement point through 1 kΩ resistor. (1-249-417-11)

Checking Method:

1) Make sure that the clock frequency meets the specified value.
(A value approx. 0.1 to 0.2 MHz lower than the actual value may be indicated due to the probe.)
2) Make sure that tracking indication appears at the nearly center of the width when manual tracking ON.

7-6. AUDIO SYSTEM ADJUSTMENT

〔Connection〕



(Should be input to L and R channels at a time.)

Fig. 7-10.

7-6-1. Hi-Fi Audio System Adjustment

Unless otherwise specified, set and adjust as follows.
Input selection ············Line 1
Audio monitor ············Stereo

〔Adjustment Sequence〕

1) VCO f0 adjustment
2) Band pass filter f0 adjustment
3) HF Switching position adjustment
4) Hi-Fi/normal discrimination adjustment
5) Deviation adjustment
6) E-E output level check
7) Overall level characteristic check

1. VCO fo adjustment (HF-24 board)

The measurement point of the right channel is indicated in [ ].

Mode	Recording
Signal	No signal
Measurement Equipment	Frequency counter
1.3 MHz adjustment	
Measurement Equipment	Pin (79) of IC201
Adjustment Element	RV202
Specified Value	1.299±0.001 MHz
1.7 MHz adjustment	
Measurement Point	Pin (69) of IC201
Adjustment Element	RV205
Specified Value	1.700±0.001 MHz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) of high input impedance (1 MΩ or more) and low capacity (10 pF or less).

Adjustment Method:

1) Connect the frequency counter to Pin (79) [(69)] of IC201.
2) Adjust for 1.299±0.001 MHz [1.700±0.001 MHz] using RV202 [RV205].

2. Band-pass filter fo adjustment (HF-24 board)

Mode	Playback
Signal	Tape recorded in SP mode
Measurement Point	CH1: Pin (70) of IC201 CH2: Pin (78) of IC201
Measurement Equipment	Oscilloscope
Adjustment Element	RV204
Specified Value	A=B

Connection:

1) Remove CN006 on the MA-106 board and input 50 mVp-p, 1.72 MHz sine-wave from the signal generator to Pin ⑦ of CN010.

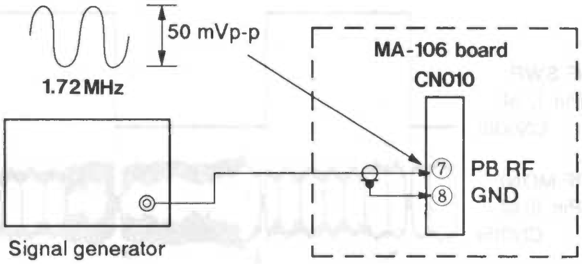


Fig. 7-11.

Adjustment Method:

1) Adjust so that the signal level of Pin (70) and (78) of IC201 are equal using RV204 (Signal level is approximately 300 mVp-p).

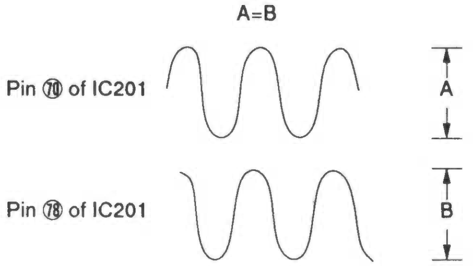


Fig. 7-12.

3. HF switching position adjustment (MA-106 board)

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	CH1: Pin ⑪ of CN005 (RF SWP) CH2: Pin ⑥ of CN015 (RF MONI)
Measurement Equipment	Oscilloscope
Adjustment Element	RV502
Specified Value	Be sure that there is no lacking portion.

Adjustment Method:

1) Press tracking buttons ▲ and ▼ at a time.
2) Correct the lacking portion of RF signal using RV502.

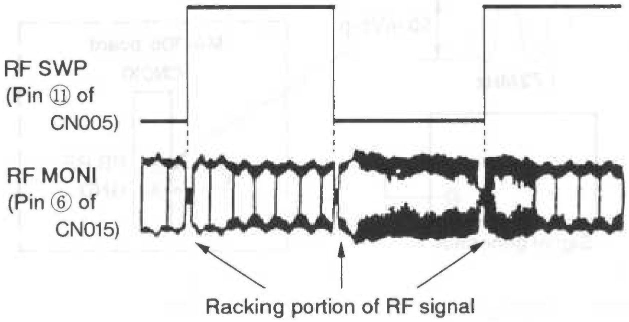


Fig. 7-13.

4. Hi-Fi/normal discrimination adjustment (HF-24 board)

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	CH1: Pin ⑪ of CN005 (RF SWP) (MA-106 broad) CH2: Pin ⑫ of CN202 (RF MONI)
Measurement Equipment	Oscilloscope
Adjustment Element	RV203
Specified Value	300 ± 10 mVp-p

Adjustment Method:

1) Adjust the RF signal level to the maximum using the tracking buttons (▲ and ▼).
2) Adjust the RF signal level to 300 ± 10 mVp-p using RV203.
3) Shift the tracking until playback picture goes out of order and check the followings.
   1. "STEREO" lit at the tracking center on the fluorescent display should be disappeared.
   2. 400 Hz audio output should be eliminated and no audio output is obtained.
      (The playback noise of normal audio can be heard.)
   3. Abnormal noise should not be generated.

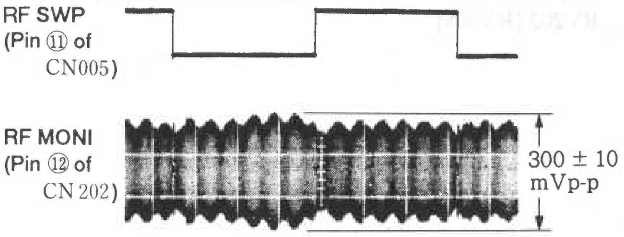


Fig. 7-14.

5. Deviation adjustment (HF-24 board)

The adjustment element of the right channel is indicated in [ ].

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	AUDIO LINE OUT left [right]
Measurement Equipment	Audio level meter
Adjustment Element	RV201 [RV206]
Specified Value	–7.5 ± 0.2 dBs

Adjustment Method:

1) Make sure that "STEREO" segment lights on the fluorescent display.
2) Adjust left [right] channel audio output level to –7.5 ± 0.2 dBs using RV201 [RV206].

6. E-E output level Check (HF-24 doard)

The measurement point of the right channel is indicated in [ ].

Mode	E-E
Signal	400 Hz
Measurement Point	AUDIO LINE OUT terminal left [right]
Measurement Equipment	Audio level meter
Specified Value	-7.5 ± 2 dBs

Checking Method:

1) Connect the audio level meter to Pin ⑤ [⑰] of CN201.
2) Adjust audio generator output level so that 400 Hz signal level becomes -15.5 dBs.
3) Make sure that 400 Hz signal level of left [right] channel AUDIO LINE OUT terminal is –7.5 ± 0.2 dBs.
4) Make sure that REC level indication of left [right] channel on the front panel indicates 0 dB.

7. Overall level characteristic Check

The measurement point of the right channel is indicated in [ ].

Mode	Recording and playback
Signal	400 Hz
Measurement Point	AUDIO LINE OUT terminal: left [right]
Measurement Equipment	Audio level meter
Specified Value	−7.5±2dBs

Checking Method:

1) Adjust audio generator output level so that left [right] AUDIO LINE IN level is –7.5 ± 0.1 dBs.
2) Record signal.
3) Playback the recorded portion.
4) Make sure that left [right] channel AUDIO LINE OUT level is −7.5±2dBs.

7-6-2. Normal Audio System Adjustment (MA-106 board)

- Make adjustment in the SP mode.
- Set the audio monitor in normal (*1).

  *1: A condition in which "STEREO", "MAIN L" and "SUB R" do not appear on the fluorescent display in playback.

〔**Adjustment Sequence**〕

1) ACE head adjustment...See mechanism block adjustment.
2) Playback output level check
3) Recording bias adjustment
4) Overall level characteristic check

1. ACE head adjustment

See "Mechanism Block Adjustment".

2. Playback output level check

Mode	Playback
Signal	Alignment tape, 1 kHz (color bar) portion
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	−1.5±2dBs

Checking Method:

1) Playback 1 kHz portion and make sure that AUDIO LINE OUT signal level is −1.5±2dBs.

3. Recording bias adjustment (MA-106 board)

Mode	Recording and playback (SP mode)
Signal	400 Hz, –30 dBs 7 kHz, –30 dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Adjustment Element	RV301
Specified Value	0±2dB

Note: Tape path adjustment should have been completed.

Adjustment Method:
1) Input signal of 400 Hz, –30 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make recording.
3) Set the AUDIO LINE IN signal to 7 kHz, –30 dBs and make recording.
4) Playback a recorded portion and measure output levels at 400 Hz and 7 kHz.
5) Confirm that the 7 kHz playback signal level is within a range of 0 ± 2 dB against the 400 Hz playback signal level . When beyond this range, adjust RV301 and repeat the steps (1) through (5).

4. Overall level characteristic check

Mode	Recording and playback (SP mode)
Signal	AUDIO LINE OUT terminal
Measurement Point	Audio level meter
Measurement Equipment	Playback level:–7.5 ± 2 dBs

Checking Method:
1) Input audio signal of 400 Hz, –7.5 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make recording.
3) Playback the recorded portion.
4) Make sure that playback level is –7.5 ± 2 dBs.

7-7. TUNER SYSTEM ADJUSTMENT

7-7-1. RF AGC Adjustment (TU-132 Board)

Signal	Broad cast TV signal
Adjustment Element	RV002

Adjustment Method:
1) Adjust the monitor TV to a maximum contrast.
2) Turn the RV002 to make snow noise visible.
3) Turn the RV002 in an opposite direction and set it to the point where the snow noise disappears.
4) Receive each channel and confirm that there are no beat picture or snow noise due to cross modulation.

7-7-2. Audio Multiple Recorder Adjustment

1. Stereo filter and VCO adjustment (TU-132 board)

〔Connection〕
1) Connect the audio generator, frequency counter, 10 μF capacitor (1-124-261-00) and 600Ω resistor (1-249-410-11 2pcs) as follows.
2) Tuner should be received no signal.

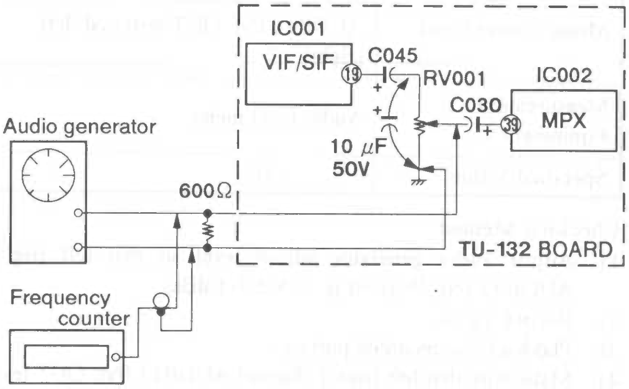


Fig. 7-15.

1-1. Stereo filter adjustment

Signal	22.9 kHz, 700 mVp-p
Measurement Point	Pin ㊱ of IC002
Measurement Equipment	Oscilloscope
Adjustment Element	RV071
Specified Value	4 mVp-p or less

Adjusting Method:

1) Connect the oscilloscope to Pin ㊴ of IC002
2) Adjust audio generator output level so that signal level of 22.9 kHz becomes 700 mVp-p.
3) Connect the oscilloscope to Pin ㊱ of IC002
4) Make signal level of 22.9 kHz minimum using RV071.

1-2. VCO adjustment

Signal	15.734 kHz, 140 mVp-p
Measurement Point	Pin ㊵ of IC002
Measurement Equipment	Oscilloscope (DC range)
Adjustment Element	RV072
Specified Value	The volt difference should be 0 ± 0.1 Vdc against when no signal input.

Adjustment Method:

1) Connect the oscilloscope to Pin ㊴ of IC002.
2) Adjust audio generator output level so that signal level of 15.734 kHz becomes 140 mVp-p.
3) Connect the oscilloscope to Pin ㊵ of IC002. (The oscilloscope is DC range.)
4) Turn the audio generator OFF and measure DC level. (DC level in no signal is approximately 4.5 Vdc.)
5) Turn the audio generator ON.
6) Make DC level equal to that in no signal using RV072.
7) Make sure that Pin ⑥ of CN001 ($\overline{\text{STEREO}}$) is "L" level.

2. Separation adjustment (TU-132 board)

Make adjustment by connecting the audio multiple signal generator to VHF/UHF input terminal.

2-1. MPX input level rough adjustment

Signal	Monaural RF signal (400 Hz, 100% MOD)
Measurement Point	Pin ㊴ of IC002
Measurement Equipment	Oscilloscope
Adjustment Element	RV001
Specified Value	245 ± 25 mVp-p (−10 ± 1 dBs)

Adjustment Method:

1) Set for 245 ± 25 mVp-p using RV001.

2-2. Separation rough adjustment

Signal	Stereo RF signal (L: 400 Hz, R: 2 kHz 30% MOD)
Measurement Point	R: Pin ④ of CN002 L: Pin ⑥ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	R: RV073 L: RV070
Specified Value	Cross talk component is minimum.

Adjustment Method:

1) Connect the oscilloscope to Pin ④ of CN002
2) Make cross talk component (400 Hz) mixed to 2 kHz signal minimum using RV073.
3) Connect the oscilloscope to Pin ⑥ of CN002
   Make cross talk component (2 kHz), mixed to 400 Hz signal, minimum using RV070.
4) Repeat steps 1) through 3). (The procedure should be ended at 3).)

2-3. Separation fine adjustment

Signal	Stereo RF signal (L: 400 Hz, R: 2 kHz 30% MOD)
Measurement Point	R: Pin ④ of CN002 L: Pin ⑥ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	R: RV001 L: RV070
Specified Value	Cross talk component is minimum.

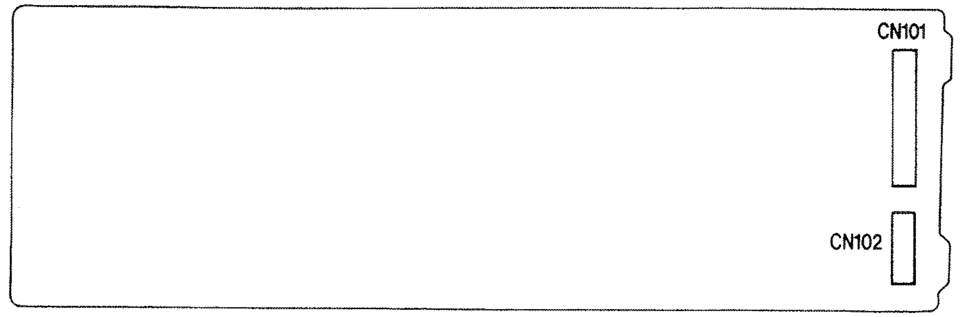
Adjustment Method:

1) Connect the oscilloscope to Pin ④ of CN002
2) Make cross talk component (400 Hz), mixed to 2 kHz signal, minimum using RV001.
3) Connect the oscilloscope to Pin ⑥ of CN002
4) Make cross talk component (2 kHz), mixed to 400 Hz signal, minimum using RV070.
5) Make sure that the cross talk component of Pin ④ and ⑥.

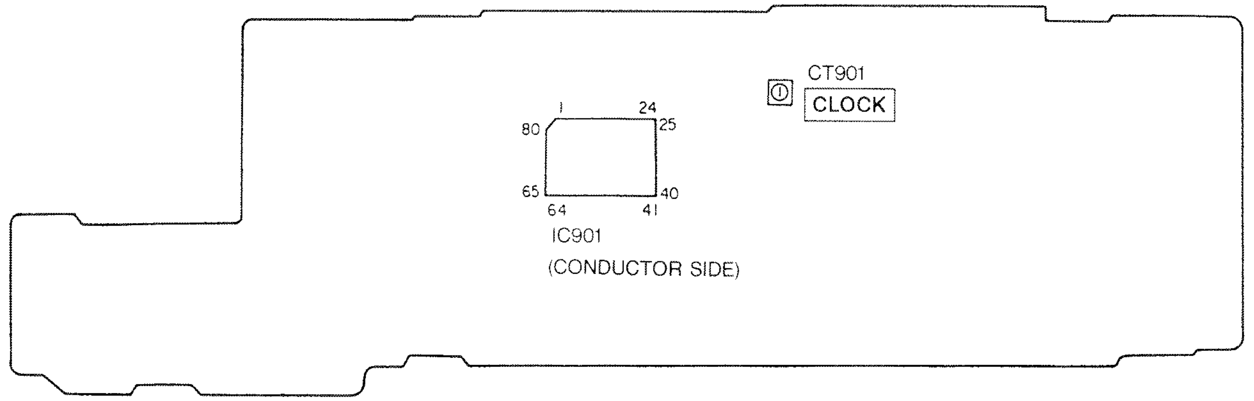
* If this adjustment can not be succeeded, repeat steps from "Separation rough adjustment". (The procedure should be stopped at "Separation fine adjustment" 5.)

7-8. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

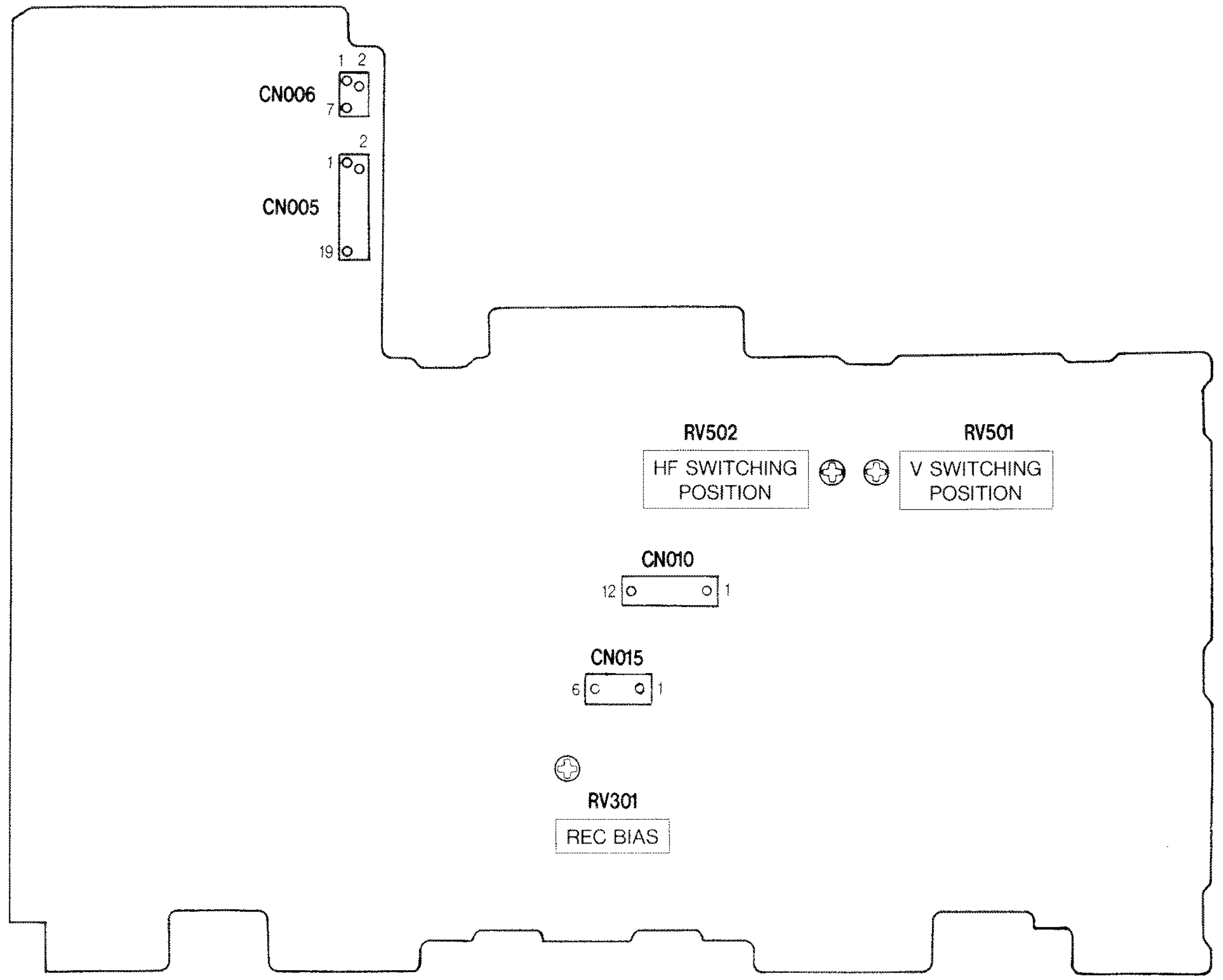
SR-370 BOARD (CONDUCTOR SIDE)


CN101
CN102

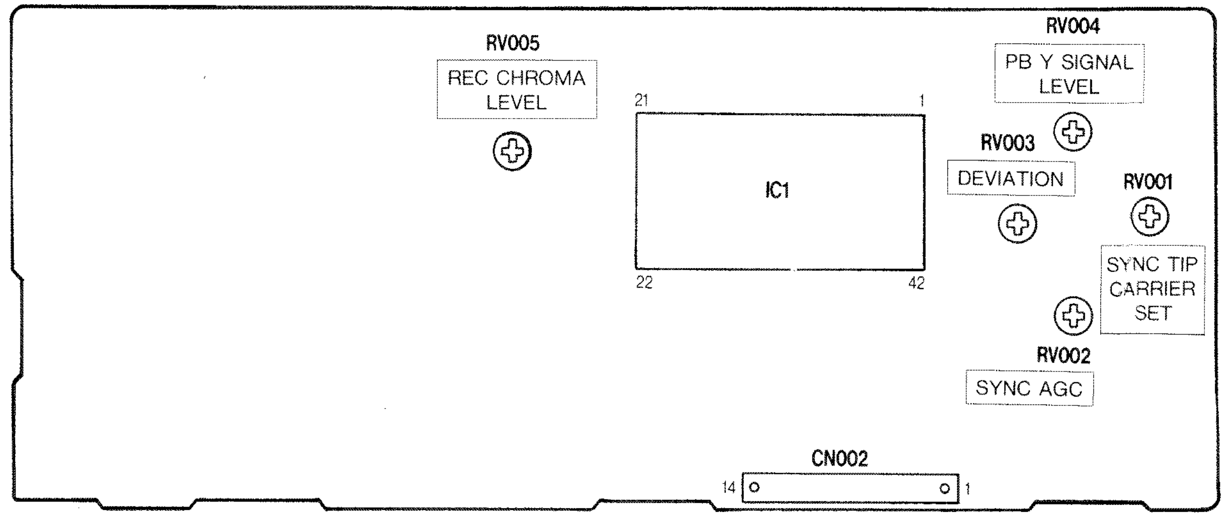
MF-140 BOARD (COMPONENT SIDE)


CT901
CLOCK
1
24
80
25
65
40
64
41
IC901
(CONDUCTOR SIDE)

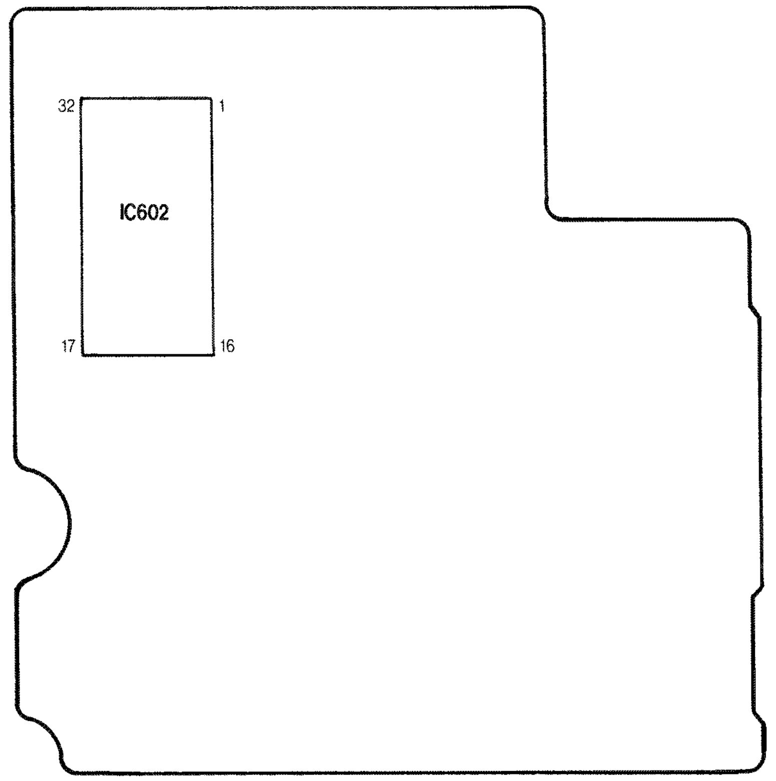
MA-106 BOARD (CONDUCTOR SIDE)


CN006
1 2
7
CN005
2
1
19
RV502
HF SWITCHING POSITION
RV501
V SWITCHING POSITION
CN010
12
1
CN015
6
1
RV301
REC BIAS

YC-114 BOARD (COMPONENT SIDE)

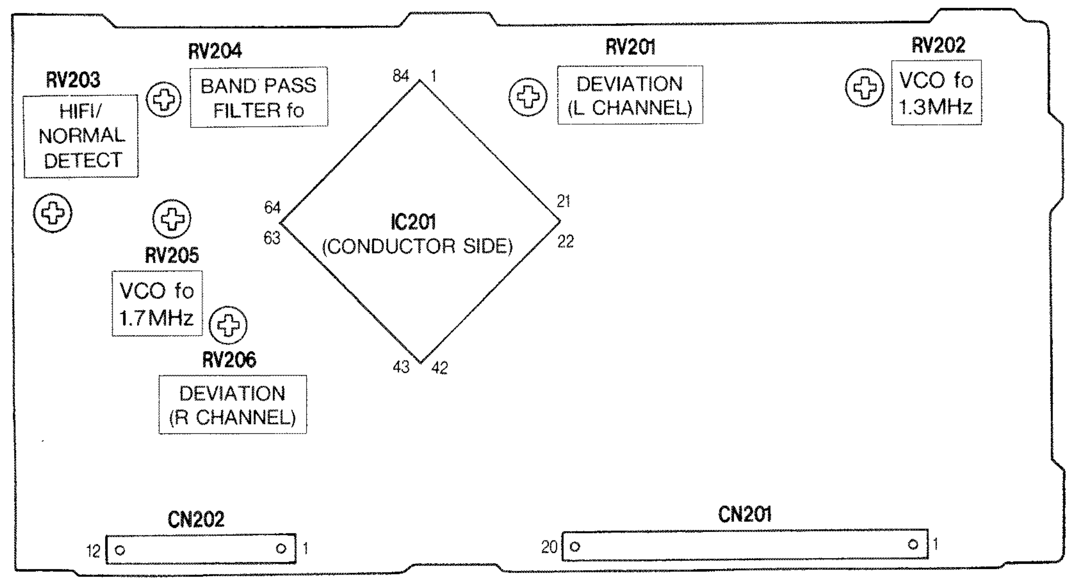

RV005
REC CHROMA LEVEL
RV004
PB Y SIGNAL LEVEL
21
1
IC1
22
42
RV003
DEVIATION
RV001
SYNC TIP CARRIER SET
RV002
SYNC AGC
CN002
14
1

CG-14 BOARD (COMPONENT SIDE)



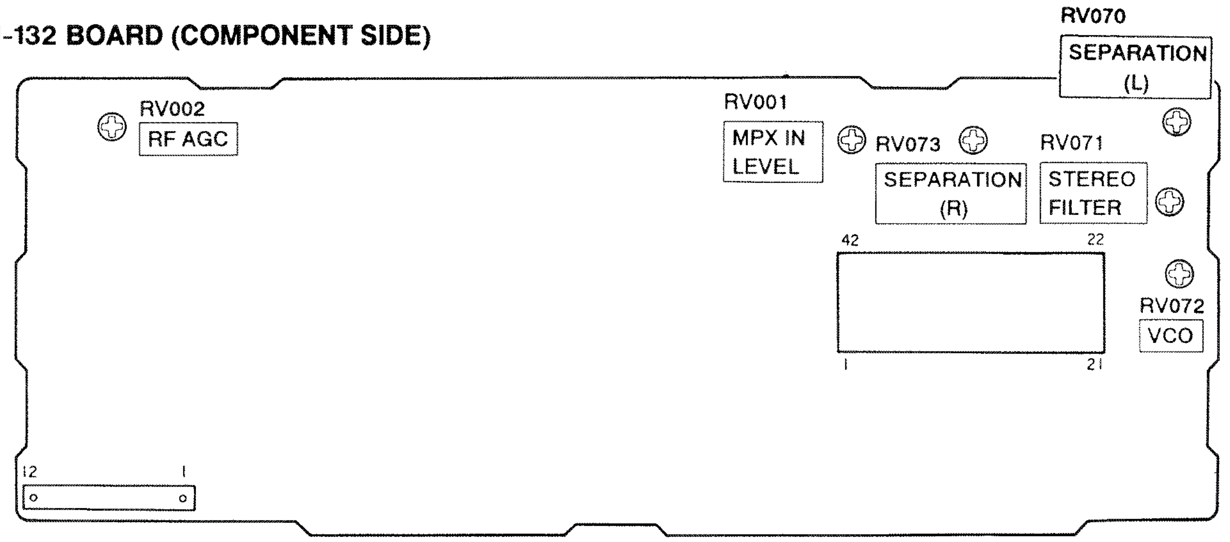
32
1
IC602
17
16

HF-24 BOARD (COMPONENT SIDE)



RV203
HIFI/
NORMAL
DETECT
RV204
BAND PASS
FILTER fo
84
1
RV201
DEVIATION
(L CHANNEL)
RV202
VCO fo
1.3MHz
64
63
IC201
(CONDUCTOR SIDE)
21
22
RV205
VCO fo
1.7MHz
RV206
DEVIATION
(R CHANNEL)
43
42
CN202
12
1
CN201
20
1

TU-132 BOARD (COMPONENT SIDE)



RV070
SEPARATION
(L)
RV002
RF AGC
RV001
MPX IN
LEVEL
RV073
SEPARATION
(R)
RV071
STEREO
FILTER
42
22
1
21
RV072
VCO
12
1

1m

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